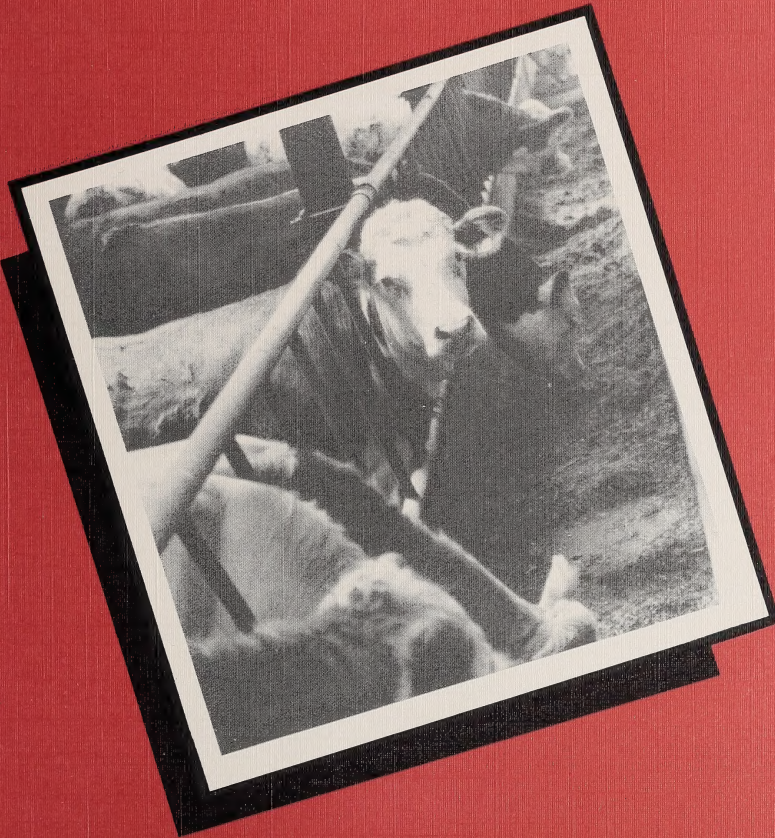


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BEEF LEADER'S GUIDE UNITS I & II



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4-H MOTTO

Learn to do by doing.

4-H PLEDGE

I pledge
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community and my country

4-H GRACE

(Tune of Auld Lang Syne)

We thank thee, Lord, for blessings great
On this, our own fair land.
Teach us to serve thee joyfully,
With head, heart, health and hand.

If any portion of this manual is used for another publication, credit must be given to 4-H Branch Alberta Agriculture.



4-H REGIONAL OFFICES

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4-H BEEF LEADERS GUIDE

This material has been designed to help the leader conduct effective meetings and group activities. As a leader you will help members achieve their objectives.

GENERAL OBJECTIVES

1. To provide an opportunity for young people to develop mentally, emotionally, and socially through association with others.
2. To develop in young people responsibility, initiative, cooperation, and other characteristics which promote better citizenship.
3. To provide an opportunity for young people and adults to associate with one another in a meaningful way.
4. To foster and promote the ability to express one's thoughts and feelings.
5. To gain a deep appreciation and increased knowledge of beef cattle.
6. To foster a greater interest in further education and its benefits.
7. To expose young people to real life and challenging experiences so that they will be more adequately prepared to face adulthood.
8. To develop abilities in leadership and decision-making and to build one's self-confidence.

BEEF PROJECT OBJECTIVES

1. To develop a pride and responsibility associated with owning animals.
2. To develop an understanding of livestock management practices.
3. To identify parts of a beef animal.
4. To handle livestock safely.
5. To train an animal for showing.
6. To identify and treat common diseases and parasites of beef cattle.
7. To identify parts of the digestive tract.
8. To identify major nutrients required for the good health of the animal.
9. Define diet and ration.

10. To develop a ration to feed the project animal.
11. To show a beef animal.
12. To identify the cuts of a beef carcass.

INTRODUCTION

The purpose of this guide is to aid and guide the leader in teaching the material in Unit I. To be effective you should read the lesson materials in the member manual and the corresponding information in the Leader Guide. In many cases extra material is supplied in your manual to help you answer questions members may ask.

The materials supplied may be used as they are or as a supplement to resources you have available. Feel free to make changes that suit the needs of you and your members. As there is more material supplied than you may be able to cover in your meetings in a year. You may choose not to cover some of the topics.

Do plan ahead with your club executive on what you want to cover at meetings. If you are planning on using some of the audio visual materials available, make arrangements with your regional specialist as soon as possible. Because of the demand for these materials, most are not available on short notice.

Read ahead in the member manual. It may prepare you for questions that are off the topic. Many useful pieces of equipment are included in the Beef and Dairy Winter Projects Book. This can reduce the cost to members when equipment is needed. The younger the members you have, the easier the project you should chose. Difficulty is affected by the size of the finished project, the stiffness of the materials, number of pieces, and the type of equipment needed for construction.

Guest speakers are an excellent source of knowledge. Make arrangements in advance. Call the person a day or two before the meeting as a reminder and finalize arrangements. Let the person know the specific subject you are interested in. At the meeting the guest should be treated courteously. A member should officially thank the speaker after the presentation. A thank-you letter from your club secretary mailed soon after the presentation is a good policy.

TEACHING SUGGESTIONS

To be a good 4-H leader, you must be interested and enthusiastic about the subject you are teaching. It is helpful if you know more about that subject than what is to be covered.

Holding the attention of members is often a problem. Many members see 4-H meetings as a place to socialize. This is true, but at the same time learning must take place. To get the attention and interest of members, use a wide variety of presentation methods. Several are listed in each topic section under "activities". These may be used in place of, or in addition to, a classroom type of lesson.

The format under each subject should be helpful. Read the objectives. These tell you what the member is expected to learn or be able to perform at the end of the lesson. They can help you direct members through the learning situation.

"Main points" is a section that outlines important ideas in short form. In some cases you have been supplied with more information than members are given. Material is presented in a simple form to make it easier for you to explain it to the members (if necessary).

The quality of your meetings will improve as you gain experience. Questions that you may ask members on each topic are included. You can use any of these you want to start a discussion. Many of these questions will come from the members as the discussion continues. This is the ideal situation, but it is not always possible.

Members have worksheets for each subject. This is their record of the information that is covered. The questions are pulled directly from their manual. Encourage neat accurate work. Answers are provided in each section of the leader manual.

Evaluation is always difficult. It allows you to judge how much each member has accomplished with your help. The system designed is flexible. Space is provided for you to give points on your club program. It does not limit what you do. Your sample will give possible points members may earn for different activities.

SOME PRINCIPLES OF GOOD INSTRUCTION

1. Know what you are trying to accomplish in each lesson.
2. Be as simple, clear and definite as you can. Avoid talking too much.
3. Prepare your lesson ahead of time.
4. Use correct terms.
5. Be fair and firm with all members.
6. Work patiently and quietly with members that are nervous.
7. Do not be sarcastic, or verbally abuse any member, even if a major problem occurs. Deal with the person away from the main group where you are not overheard by other members.

8. Keep up interest by varying the presentation and involving all of the members.
9. Encourage them with praise when it is deserved, especially with younger members. Do not play favorites.
10. Set a good example.
11. A good lesson should have an; introduction - 5 minutes; body - 45 minutes; conclusion - 10 minutes.

METHODS OF INSTRUCTION

Demonstration - For many subjects in beef cattle husbandry this is the best teaching method. To make it an effective experience;

1. Prepare ahead of time. Make sure you have everything you will need.
2. Tell the members what you will be showing them before you do it.
3. Give the demonstration so that all of the members can see what you are doing. Face them as you speak so that your words can be heard.
4. Outline the steps or important points as you give the demonstration.
5. Do not rush through the demonstration.
6. Answer questions the members may ask.
7. Review the main points of the demonstration with the members.
8. If it is appropriate, have the members perform the skill (not always possible or practical).

PROPOSED MEETING SCHEDULE

The following outline for meetings may be used. The first four meetings may done in any order, or may be combined. Not all methods are necessary for your meetings.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
1	<ol style="list-style-type: none"> For members to purchase or select good quality calves as project animals. To collect information for the Club Registration Form. 	<ol style="list-style-type: none"> Visit local sources of calves. Bring in cattle breed magazines and look at performance records. (Materials from A.I. companies also good.) Order films from breed associations. 	<ol style="list-style-type: none"> Attend the meeting or activity. Purchase or select a calf to be used as project animal for the year. To provide information for Registration. 	<ol style="list-style-type: none"> Attendance Achievement Day Record Book
2	<ol style="list-style-type: none"> To recognize breeds of cattle commonly used in your area. To recognize the similarities between a purebred animal, and a partbred animal as having some similar characteristics. 	<ol style="list-style-type: none"> Look through beef cattle magazines and collect pictures of purebred and/or partbred animals. Visit purebred and commercial breeders. Show film from a beef breed association. Discuss qualities of this breed and other breeds available to members. Order a film for next meeting. 	<ol style="list-style-type: none"> Attendance Read Materials Project Book Questions Breed Search 	<ol style="list-style-type: none"> Attendance Project Book Questions

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
3	<ol style="list-style-type: none"> 1. Decide on the sex of the animal to be purchased. 2. To calculate a suitable purchase price for a calf. 	<ol style="list-style-type: none"> 1. To attend a variety of cattle sales to determine the methods used. 2. Have member record calf price in their record book. 3. Order film for next meeting. 	<ol style="list-style-type: none"> 1. To purchase a calf. 2. Read material. 3. Do Project Book Questions 4. Make entries to Record Book 	<ol style="list-style-type: none"> 1. Attendance 2. Record Book 3. Achievement Day 4. Project Book Questions
4	<ol style="list-style-type: none"> 1. To promote the safe handling of live-stock. 2. To prevent calf and member injuries. 3. To select a winter project (as a group). 	<ol style="list-style-type: none"> 1. Demonstrations on: <ul style="list-style-type: none"> - holding a lead shank - leading an animal into a grooming chute - tying an animal. 2. Show a film on safety around animals, example "A Sixth Sense". 3. Bring Beef and Dairy Winter Project Book to the meeting. 	<ol style="list-style-type: none"> 1. To attend the meeting. 2. Read the materials. 3. Do project book materials 4. Make entries to Record Book 5. To select a winter project as a group. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Record Book
5	<ol style="list-style-type: none"> 1. To reduce stress on animals when they are placed in new surroundings. 2. To halter break a calf. 	<ol style="list-style-type: none"> 1. Demonstrate: <ul style="list-style-type: none"> - haltering a calf - tying a calf - leading 2. Have a veterinarian come in and talk to the members about stress related sickness in calves. 	<ol style="list-style-type: none"> 1. To provide housing for their new calf (calves) 2. To provide good feed to the calf. 3. Read the materials 4. Do the Project Book Questions. 5. Begin the winter project. 	<ol style="list-style-type: none"> 1. Attendance 2. Record Book 3. Project Book Questions 4. Winter Project

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
6	<ol style="list-style-type: none"> 1. To identify common diseases of beef cattle. 2. Work on the winter project. 	<ol style="list-style-type: none"> 1. Demonstrate use of a balling gun. 2. Demonstrate giving injections. 3. Have a veterinarian or cattle producer come in and talk about common cattle diseases and their prevention. 4. Order audio-visual materials. 	<ol style="list-style-type: none"> 1. Use a balling gun when needed. 2. Give vaccination to animals. 3. Attend the meeting. 4. Read the material 5. Do Project Book Questions 6. Make entries in the Record Book. 7. Work on the Winter Project. 8. Participate in discussions 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Record Book 4. Winter Project
7	<ol style="list-style-type: none"> 1. To control common cattle parasites. 2. Work on the winter project. 	<ol style="list-style-type: none"> 1. View the audio visual materials 2. Have a veterinarian come in and talk about parasite control. 3. Demonstrate basic checks for parasites. 4. Demonstrate how to treat cattle for parasites. 5. See film on warble control ("Warble Control", "Cattle Warble Flies" or "Co-Ral") 6. Order films 	<ol style="list-style-type: none"> 1. Attend the meeting. 2. Participate in discussions. 3. Treat animals for parasites. 4. Read materials 5. Do questions in Project Book 6. Make entries in the Record Book 7. Work on the Winter Project 	<ol style="list-style-type: none"> 1. Project Book Questions 2. Record Book 3. Winter Project

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
8	<ol style="list-style-type: none"> 1. To identify parts of the digestive tract. 2. To identify nutrients required by the animal. 3. To balance a ration for a project animal. 4. To work on the winter project. 	<ol style="list-style-type: none"> 1. Use balloons of different colors and sizes to show how the stomachs are arranged. 2. Visit a feedlot or feed-mill to see rations being mixed. 3. Go through the example of a ration before the meeting. It is not hard. Just slow. 	<ol style="list-style-type: none"> 1. Attend the meeting 2. Participate in activities 3. Read the materials. 4. Do questions in the Project Book 5. Make entries in the Project Book 6. Make entries in the Record Book 	<ol style="list-style-type: none"> 1. Project Book 2. Record Book 3. Winter Project
9	<ol style="list-style-type: none"> 1. To prepare a beef animal for show. 	<ol style="list-style-type: none"> 1. Demonstrate all of the stages in preparing an animal to be shown (includes training and grooming). 2. Have a person who travels on the cattle show circuit to demonstrate methods of preparation and showmanship to the members. 3. Set up a display of grooming equipment. 4. See film "The Final 30 Days". 	<ol style="list-style-type: none"> 1. Participate in activities 2. Teach the animal to lead. 3. Prepare the animal for Achievement Day. 4. Read the materials. 5. Do the Project Book Questions. 6. Make entries in the Record Book. 	<ol style="list-style-type: none"> 1. Project Book Questions 2. Record Book 3. Achievement Day

PROPOSED SCHEDULE FOR PUBLIC SPEAKING TRAINING

This is intended to increase the practice all members have in Public Speaking. The activities are to continue through the club year.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
All Meetings	1. To increase the confidence of members when speaking in public.	1. At each club meeting a short (less than 5 minute) talk or demonstration be given by a club member. 2. Have members pick, or assign the meeting, the presentation will be given at. 3. Keep a list of possible topics. Members can come up with these.	1. Choose a topic related to horses. 2. Find information in books and magazines you may use. 3. Write a short talk and practice it at home. 4. Write short notes from the talk that you can follow during talk.	1. Giving the presentation.
December	1. To help members choose a topic for a speech. (15 minutes)	1. Work with the members and come up with topics. Break general subject headings down into specific headings. 2. Make up a list of resource materials that are available to club members.	1. To contribute ideas. 2. To decide on a topic by the next meeting. The speech will be used for the Club Speakoffs.	1. Attendance
January	1. To select a topic for the Public Speaking Competition. 2. To develop an outline for the speech. 3. To give the time limits for speeches. (20 minutes)	1. Discuss what should be included in an Introduction, Body, and Conclusion of a speech. 2. Help members work on an outline for their speech.	1. To write an outline for their speech. 2. To collect reference material at home, and write the speech.	1. Completing the outline.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
February	<ol style="list-style-type: none"> 1. To practice a completed speech. 2. To prepare public speaking note. <p>(30 minutes)</p>	<ol style="list-style-type: none"> 1. Check over the material in the completed speeches. 2. Split the members into small groups (2-4 people) and have them read their speeches to each other. 3. Have the members pick points from their speech to use as notes on notecards when the speech is given. 	<ol style="list-style-type: none"> 1. Bring speech to the meeting. 2. Practice reading the speech to a small number of members. 3. Underline important points to be used on notecards. 	<ol style="list-style-type: none"> 1. Completion of the written speech.
March	<ol style="list-style-type: none"> 1. To present a speech to the group 	<ol style="list-style-type: none"> 1. Give each member an opportunity to speak. 2. Encourage the members. Give help where it is needed. 	<ol style="list-style-type: none"> 1. To participate in club practice and in the club competition. 	<ol style="list-style-type: none"> 1. Giving the speech.

WHERE TO BUY: AUCTIONS VS PRIVATE SALES

Objectives:

1. To identify places where 4-H calves may be bought (if purchase necessary).
2. Identify advantages and disadvantages of getting calves from different sources.
3. To minimize errors made when buying from auctions.
4. To set standards for buying animals.

Activities:

1. Visit the local auction market when cattle are being sold.
2. Attend a purebred cattle sale.
3. Visit a purebred cattle breeder.
4. Visit a commercial cattle breeder.
5. Look at cattle performance records.

Main Points:

1. Many 4-H members have calves at home to chose from. Despite this, members should still be aware of the advantages and disadvantages of buying from different sources.
2. It is an advantage for many members to get an animal that has had the basic, health affecting treatments done. This eliminates the risk of loss due to complications. This will affect the calf price.
3. Auctions are a difficult place for many members to buy. Often they do not look at animals ahead of time so they do not know what to buy.
4. Go over current calf prices. Discuss factors that will affect the prices.

Discussion Questions:

1. Where can you get 4-H calves?
2. What health care should the calf have?
3. What problems can you have if you go to an auction to buy a calf?
4. What should you do before the sale if you want to buy a calf?
5. How much should you pay for a calf?
6. What affects the calf prices at an auction?

BREEDS

Objectives:

1. To identify breeds of beef cattle.
2. To contrast and compare purebred and partbred animals.

Activities:

1. Collect pictures of different breeds of beef cattle. Include pictures of steers, cows, bulls and young stock.
2. Visit local purebred and commercial breeders.
3. View films available from the breed associations.

Main Points:

1. The British breeds were the foundation stock for the beef cattle industry in Western Canada.
2. Our beef cattle have their origins in Britain or Europe.
3. Individual breeds developed because of isolation from outside stock. Selection was carried out on a local basis for a particular type of animal.
4. Crossbred animals benefit from their parentage by inheriting good points from more than one breed. This is known as hybrid vigor. It is common for traits to improve more than would normally be expected in a breeding program. Traits that are often affected by hybrid vigor are:
 - birth weight
 - weaning weight
 - feed conversion efficiency
 - rate of gain (daily gain)
 - days to market weight

Discussion Questions:

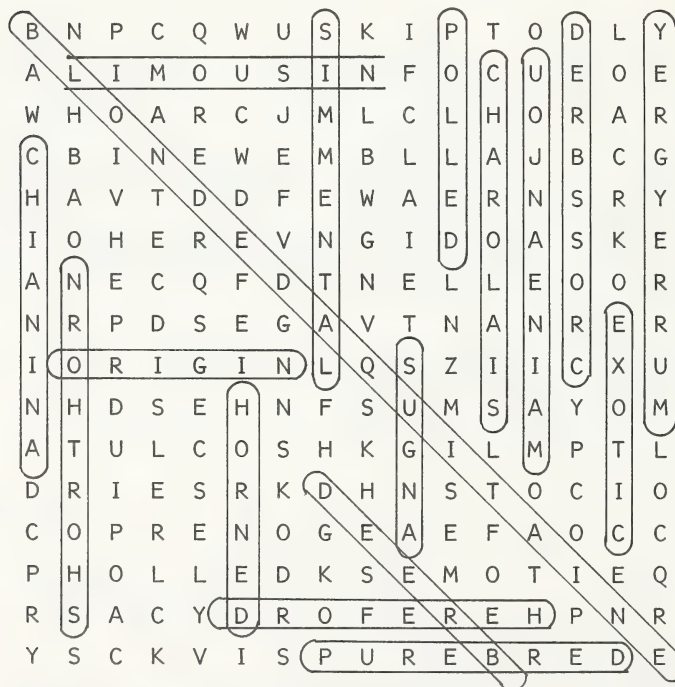
1. What are the common breeds of cattle?
2. Where did _____ cattle come from originally?
3. What is a crossbred animal?
4. Which would you prefer as a project animal; a purebred or a crossbred? Why?
5. Which animal would be ready for market earlier; a European breed or a British/European crossbred?

6. How does breeding affect the price of a calf?

Answers to Project Book Questions:

1. Aberdeen Angus
Hereford
Shorthorn
2. Charolais
Simmental
Chianina
Maine-Anjou
Marchigiana
Murray Grey
Saler
Limousin
Blonde d' Aquitaine
Romangola
3. Individual answer
4. Examples: color, temperament, muscling, horned/polled

"BREED" SEARCH



SELECTION

Objectives:

1. To decide whether a heifer or steer will be chosen as a project animal.
2. To judge groups of suitable calves as 4-H prospects.
3. To select a calf as a project animal.
4. To calculate a suitable purchase price for the project animal.

Activities:

1. Use audio-visual materials. Suitable materials:
 "Crossbreeding, Preconditioning Beef Cattle" and "Testing Grain
 and Forage Feed Value"
 "Beef Conformation"
 "Growth Implants"
2. Attend cattle sales.
3. Visit cattle producers.
4. Members chose their calves.

Main Points:

1. Decisions on the purchase or selection of calves must be made by the individual member. The member only learns by his/her own errors. Leader instruction should teach well enough that few errors are made.
2. When looking at calves compare individuals that have obvious differences when you start. As members begin to recognize the faults start to compare animals with less obvious differences and faults. This is some of the most important teaching you will do during the year. Unlike feeding, which is done daily, selection of a project animal is only done once a year.
3. When judging, discuss the effects that health has on appearance.
4. Discuss the advantages of buying preconditioned calves. Information is available from Alberta Agriculture.

Discussion Questions:

1. What advantages do steers have over heifers as a project animal?
2. Why would you choose a heifer as a project animal instead of a steer?
3. What size of calf should you be buying?
4. What effect does the frame size have on the amount of time it will take to finish a calf?
5. Why should you choose a long bodied calf?

6. What is a preconditioned calf?
7. What advantages are there to buying preconditioned calves?
8. How will preconditioning affect the price of the calf?
9. What are calves selling for? What are preconditioned calves selling for?
10. How so you use this price to get the actual cost of the calf?
11. When should you get your project animal?

Answers to Project Book Questions:

1. Treatments the calf has had: warbles, vaccinations, dehorning, castration, weaned.
Previous feeding history.
Performance records on siblings or parents.
2. Cost
Rate of gain
Selling price
Future plans as a producer
3. When you are judging you are comparing one animal with another.
4. Animal may be overfinished by sale time. Calf may finish below the desired weight.
5. Animal may be underfinished at sale time even if it is heavy enough for the sale (1000-12000 pounds). May be difficult for a young member to handle.
6. Fiery eyes, kicking, charging, nervous.
7. Individual answer.
8. Parts identification. See Project Book, page 9.

SAFETY

Objectives:

1. To promote safe livestock handling practices.
2. To prevent injury to the members or their calves.

Activities:

1. Demonstrations on:
 - How to hold a lead shank
 - How to lead an animal into a grooming chute
 - How to tie an animal.
2. Film "A Sixth Sense".

Main Points:

1. Animals are unpredictable. They have a completely different view from us. We must always be careful, even if we know the animal well.
2. Transporting animals is hard on them. They are under stress unless they are used to travelling. This makes it hazardous for them, because they may get scared. Fear reactions can lead to animal and human injuries.

Discussion Questions:

1. Do you know anybody who has been hurt working with cattle?
2. How could the accident have been prevented?
3. Why should you wear boots when you are working around cattle?
4. How should a lead shank be held?
5. How can cattle get hurt?
6. How can those injuries be prevented?

Answers to Project Book Questions:

1. Charging and kicking
2. Halter does not fit properly. Handler has the rope wrapped around his hand. Leading the animal with too much rope and standing too far behind the animal's head.

3. Some cows have a very strong mothering instinct and will do anything to protect their calf. This includes charging at people.
4. Electric prod and whip
5. Walk alongside the chute, not in front of the animal into the chute.
6.
 - Check that the tailgate is fastened properly
 - Crowd cattle so they can not move around or fall
 - Put sand on the floor to improve the footing
7. Remove used baling twine from the area.
Fix loose or broken boards.
Hammer down protruding nails.
Pick up garbage.

WELCOME!

Objectives:

1. To reduce stress on project animals.
2. To provide good housing for new animals.
3. To minimize the effect of changes in feed.

Main Points:

1. Animals suffer from stress when they are moved to unfamiliar surroundings. Extra care needs to be given to avoid illness.
2. After moving the new calf, avoid treatments such as castration and weaning until the animal has adjusted.

Discussion Questions:

1. What conditions can upset a new animal on the farm?
2. What extra care should it get?
3. Why are clean, dry, sheltered conditions necessary?
4. What problems can you have with feed when a new animal arrives?

HALTER BREAKING

Objectives:

1. To put a halter on the project animal.
2. To teach the project animal to stand tied
3. To teach the project animal to lead

Activities:

1. Demonstrate:
 - haltering a calf
 - tying a calf
 - leading
 - twisting the tail

Main Points:

1. Animals should be haltered when they are young. If training is delayed, the advantage the animal has increases.
2. The animal should be tied short so it can not get a leg over the rope or get as much leverage to pull. Tie the animal to a solid obstacle.
3. Members should work with their animal each day until it co-operates. Most members will give up when the animal will not co-operate, but that actually reinforces the bad behavior. The animal learns that if it behaves very badly it will get turned out. By working until the animal behaves, it will learn to do what the handler asks, because the reward is to be let loose.
4. Control of the head is critical when leading an animal. Holding a short shank will give the best control because it limits the movement of the head. (Also prevents accidents such as getting kicked).

Discussion Questions:

1. When should you halter break your project animal?
2. Why should a halter be taken off an animal out on pasture?
3. Why should you not leave an animal standing tied without watching it?
4. How should you hold the lead shank?
5. Where should you stand when you lead your steer/heifer?
6. What can you do to make your animal walk.

Answers to Project Book Questions:

1. No. Tied to a movable object on a long rope. Knot can not be undone easily.
2. Individual answer.
3. Once the calf learns it can escape, it will try every time you lead it. The calf must learn to respect a pull on the halter.
4. Hold the lead shank close to the animal's head. This gives the person control over the head. Keeping the head up is important.

5. Pull the calf at right angles to upset its balance, forcing it to move.
Have another person walk behind the calf.
Twist the calf's tail.
Have another calf walking in front of you.
6. b

ANIMAL HEALTH - DISEASES

Objectives:

1. To list the causes of non-infectious diseases.
2. To list the causes of infectious diseases.
3. To list the ways diseases may be spread.
4. To recognize bloat.
5. To list the causes of bloat.
6. To list the causes of hardware disease.
7. To prevent hardware diseases.
8. To list the symptoms of blackleg.
9. To prevent blackleg.
10. To list the symptoms of shipping fever (pneumonia).
11. To treat animals for shipping fever.

Activities:

1. Demonstrate how to administer a magnet using a balling gun.
2. Demonstrate how to give injections (for antibiotics or vaccines).

Main Points:

1. Infectious diseases will spread between animals. If one animal in the herd gets sick, others will also become infected. Direct physical contact is not necessary to transfer a disease.
2. Bloat is generally caused by improper feeding. Many cases can be prevented by good management.
3. All cattle should be vaccinated against blackleg. Often no symptoms are visible until animals start to die. When this happens losses can be very high. Vaccines are of little use at this point, because it will take several weeks before they are effective. Large doses of antibiotics will help animals during early stages of the disease.

Discussion Questions:

1. What are the causes of infectious diseases?
2. How does an infectious disease act in a herd?
3. How does a non-infectious disease act in a herd?

4. How can diseases be spread?
5. What causes bloat?
6. What can be done to reduce the number of cases of bloat?
7. What is hardware disease?
8. What are the dangers of hardware disease?
9. What can be done to reduce hardware disease?
10. What are the symptoms of shipping fever?
11. How can you treat animals with shipping fever?
12. What are the symptoms of blackleg?
13. What should be done with animals that die of blackleg?

Answers to Project Book Questions

1. Non-infectious diseases may be caused by: trauma, stress, tumors, hereditary defects, toxicity, nutrition, reproductive disorders.
2. Animal is able to ward off the disease because of a vaccination or previous exposure to the disease.
3. Balling gun
4. I.M. - Intramuscular injection
Sub.Q. - Subcutaneous injection
I.V. - Intravenous injection

ANIMAL HEALTH - PARASITES

Objectives:

1. To reduce the number of health problems in project animals.
2. To prevent the spread of disease.
3. To recognize common health problems.
4. To recognize parasite infestations.
5. To treat cattle for warbles and lice.
6. To vaccinate cattle against common diseases.

Activities:

1. Have a veterinarian come in and talk about animal health.
2. See audio visuals:
 - Biting Insects
 - Warble Control
 - Cattle Warble Fliesor
 - Co-Ral

3. Demonstrate:
 - What to look for with warble infestations.
 - What to look for with infestations of lice.
 - Treating Cattle for Warbles.
 - Treating Cattle for Lice.

Main Points:

1. Parasite infestations affect the overall health of the animal. Unlike disease, the animal does not become immune to parasite infestations. A heavy infestation of parasites can reduce the condition of an animal to a point where it is more susceptible to disease.
2. There are two types of lice. These are most common in the winter and spring. Losses to the producer are through lower weight gains, and smaller calf crops.
3. Lice infestations are reduced by good management.
4. Warbles cause economic losses through physical damage to the muscle and hide. These increase the costs to the meat processors because of waste.
5. Treating for warbles must be done properly to prevent physical damage to the cattle. When treated at the wrong time of year, warbles may be killed around the spinal column or esophagus. This can damage or kill cattle.
6. Always read the label when you are working with chemicals. Use the safety precautions suggested, they are there to protect you and your livestock.

Discussion Questions:

1. What are parasites?
2. What external parasites are common with cattle?
3. How do they cause losses to the beef producer?
4. How would you tell that your steer/heifer has lice?
5. What can you do to reduce the problem?
6. What type of damage do warbles cause?
7. How do you treat cattle for warbles?
8. When should cattle be treated for warbles?
9. What is ringworm?
10. What time of year do you see ringworm?

11. Why should you wash your hands thoroughly after handling an animal with ringworm?
12. How can you treat ringworm?

Answers to the Work Book Questions:

1. A parasite is an animal that lives of another animal. The host is used to provide a home and food.
2. It may use the same food of the host or use fluid from the host's body.
3. Biting lice
Sucking lice
4. Lice can be found on:
 - top of the tail head
 - inside the thighs
 - along the neck and shoulders
5. Blood sucking lice can cause anemia.
6. The warble is also known as the cattle grub.
7. Loss through:
 - damage to the hide and meat
 - slimy pockets of meat need to be trimmed out
 - decreased weight gain
8. After late October (or mid November) depending on where you live, and the weather. Later than this the grubs will group around the esophagus or spinal column. Treatment may kill the cattle at this stage.
9. Systemic Insecticide. This is absorbed directly into the body of the animal. The parasite can be killed anywhere in the body.
10. Treat for warbles in October or early November.
11. Ringworm looks like white-grey scaley patches or rings.

NUTRITION

Objectives:

1. To identify the parts of the digestive tract of the animal.
2. To identify the uses of feed by the body.
3. To identify uses of major nutrients in the body.

Activities:

1. See film "The Remarkable Ruminants".

Main Points:

1. Food is needed by the body for:
 - maintenance (for energy, warmth, cell replacement)
 - growth
 - reproduction
 - fattening and finishing
 - production (example - milk)
2. Cattle must have water every day. This is critical, because their stomachs use a larger fluid volume than the stomach of a monogastric. In addition to this, 70% of the body is made up of water. Water is found in (and around) cells, blood, digestive juices and enzymes.
3. Roughages supply the animal with carbohydrates, protein, vitamins and minerals.
4. Grains supply the animal with energy (carbohydrates), protein, fat, vitamins and minerals.
5. Nutrients are needed in the proper proportion for the animal to get the most value from them. In some cases, the balance between two nutrients is essential. The best example of this is calcium and phosphorus. If one of these is below the necessary level, the other will be used in proportion. Any mineral in excess will not be used by the body. Too much of one nutrient (very high levels) can also cause problems.

Discussion Questions:

1. How many parts are there in cow's stomach?
2. What are the names of the four stomachs?
3. Why does an animal need food?
4. What does the food need to supply the animal with?

Answers to the Project Book Questions:

1. Four
2. The animal needs feed for: maintenance, growth, reproduction, fattening and finishing, production.
3. A well balanced diet is one where the animal is fed all of the nutrients that it needs in the proper amounts.
4. Cattle can get sick drinking stale, dirty water.
5. The essential nutrients are:
 - energy
 - protein
 - fats
 - vitamins and minerals

6. Grains and roughages provide energy.
7. Energy is needed for: muscle movement, growth, reproduction, milk production, maintaining body temperature.
8. Protein is needed to build and repair: muscles, internal organs, skin, hair, hooves, nerves, blood cells, bones and enzymes.
9. Concentrates are grains and small pellets. Roughages are hay, silage, grass and legumes.
10. Grain can be made more palatable by adding salt or molasses.

DIET AND RATIONS

Objectives:

1. To compare a diet and a ration.
2. To formulate a ration.
3. To list factors that affect the feed intake of cattle.

Activities:

1. Visit a feed mill and see rations being made up.
2. Visit a feedlot and see how rations are developed.

Main Points:

1. A diet and ration are different. A diet is the amount of feed required daily by the animal. The ration is the feed mixture made to meet the daily requirements of the animal.
2. A ration is made up of concentrates (grain or pellets), roughage and supplements. Supplements may be mixed into the ration or feed separately.
3. Formulating a diet should be tried by all members. The method here is not difficult. It will give members an idea of how much they should be feeding their animal. Select the gain (and the percentage of roughage fed) on the current weight of the animal, compared to the final desired weight.

Example: 600 pound steer
 1200 desired sale weight
 240 days
 $1200 - 600 = 600$ pounds
 $600 - 240 = 2.5$ pounds (1.1-1.2 kg) per day gain required.

4. The following is a sample of the ration formula your members will be doing.

Balancing a Ration - Questions:

1. What are the nutritional requirements for your project animal? (see tables in "Formulating a Ration")

Body (kg)	Weight (lb)	Daily (kg) Gain	Total Protein (kg)	Digestible Energy (Mcal)	Dry Matter (lb)	Ca (g)	P (g)
331	150	.7	.49	9.6	3.9	18	14

* Body Weight - What the animal weighs now.

Daily Gain - Amount of weight the animal needs to gain each day to be the desired weight at the sale.

Dry Matter - All feed contains some moisture. The animal will eat more than this in actual volume.

Digestible Energy - The amount of energy needed in the diet.

Total Protein - Amount of protein present in the feed.

2. What feeds do you plan to use?

- Oats

- Alfalfa/Brome

* The feed used is the member's choice of what they have available.

3. What nutrients do these feeds supply (see tables)

Feed	Dry Matter	Energy (Mcal)	Crude Protein	Calcium	Phosphorus
Hay	55	1.95	14.4	-	-
Oats	89	2.75	9.2	2.6	2.4

* (Do this for each feed used).

4. How many kg of hay can your animal eat per day? (see tables and select the weight of your animal and desired gains)

$$\frac{55 \text{ kg}}{100 \text{ kg}} \times 3.9 \text{ kg} = 2.14 \text{ kg}$$

(a roughage in the ration) (minimum dry matter consumption in kg) (total dry matter of hay fed in kg)

* Roughage is expressed as a percentage. The percentage is found in the tables. When there is a range to be chosen from, decide whether you want to feed the maximum roughage, minimum roughage or something in between.

The figure for minimum dry matter comes from your information in #1.

5. Balance the ration for energy (DE)

Animal requires	<u>9.6 Mcal</u>
Hay supplies 2.14 kg x 1.95 Mcal/kg)	<u>4.17 Mcal</u>
Amount of DE required from oats (grain)	<u>5.43 Mcal</u>
Grain Required (DE required - Mcal of DE/kg)	<u>1.97 kg</u>

* Animal requirement from #1.

- The kg of hay supplied is the answer from #4.

- The amount of DE from the grain is equal to:
(Animal requirement) - (DE in the hay).

6. Check the protein, calcium, phosphorus and Vitamin A in the ration.

Protein:

$$\frac{2.14 \text{ kg}}{\text{(roughage)}} \times \frac{14.4 \% \text{ protein}}{100} = .31 \text{ g protein}$$

$$\frac{1.97 \text{ kg}}{\text{(grain)}} \times \frac{9.2 \% \text{ protein}}{100} = .18 \text{ g protein}$$

Calcium:

$$\frac{2.14 \text{ kg}}{\text{(roughage)}} \times \text{-- calcium} = \text{-- g calcium}$$

$$\frac{1.97 \text{ kg}}{\text{(grain)}} \times \frac{2.6 \text{ calcium}}{100} = 5.12 \text{ g calcium}$$

Phosphorus:

$$\frac{2.14 \text{ kg}}{\text{(roughage)}} \times \text{-- phosphorus} = \text{-- g phosphorus}$$

$$\frac{1.97 \text{ kg}}{\text{(grain)}} \times \frac{2.4 \text{ phosphorus}}{100} = 4.72 \text{ g phosphorus}$$

Feed	kg/day	Protein	Calcium	Phosphorus
Hay	2.14	.31	-	-
Oats	1.97	.18	5.12	4.72
TOTAL	4.11	.49	5.12	4.72

* This table provides you with the total amount of each nutrient available in the feed. The figures will be used in #7.

7. How do the nutrients in the ration compare with the requirements of your animal?

Nutrient	Required by animal	Supplied by feed	Difference
Digestible Energy	9.6	9.6	0
Protein	.49	.49	0
Ca	18	5.12	12.88 g
P	14	4.27	9.28 g

* Animal requirements from #1. Feed tables from #6 table.

Discussion Questions:

1. What is the difference between a diet and a ration?
2. What types of feed are used to make up a ration?
3. What are examples of concentrates?
4. What are examples of roughages?
5. What effect does flavor have on the amount of feed eaten?

Answers to Project Book Questions:

1. A diet is the amount of feed required by the animal every day to supply its nutrients.
2. A ration is the mixture or combination of feeds that are fed to an animal to meet its daily requirements.
3. Palatability is how tasty the feed is to the animal.
4. Palatability is affected by flavor, smell, appearance, temperature, texture and dustiness.
5. Digestibility is the percentage of nutrients that can be used by an animal.
6. Digestibility is affected by the form of the food.

Balancing a Ration - Questions:

1-7. Individual Answer

8. Individual answer (Protein and Vitamin A are commonly added)

9. Supplement: examples

Energy - sugar beet pulp, molasses, soybean meal

Protein - soybean meal

Ca and P - mineral supplement

Vitamin A - vitamin supplement or injections

* Vitamin A should be supplemented. Although amounts may be adequate in new hay, the amount decreases over time.

SHOWING BEEF CATTLE

Objectives:

1. To train the hair of the project animal by daily grooming.
2. To wash and dry the project animal.
3. To clip a project animal.
4. To prepare an animal for showing.

Activities:

1. Demonstrate how to:
 - groom an animal
 - wash an animal
 - blow dry an animal
 - clip a steer
 - clip a heifer
 - make a tail ball
 - bone the legs
 - work the tail hair into place
2. See the film "The Final 30 Days".

Main Points:

1. Work on the animal must have begun well in advance of the 4-H show and sale. Many of the practices can not be done at the last moment with any success.
2. Clipping must be done in advance to allow the hair to grow and hide any errors. Clipping is intended to give the animal a neat, smooth appearance. It can hide a variety of faults.

Clipping will vary from animal to animal, but try to follow breed current standards. There are also variations by sex of the animal.

3. The tail ball is intended to make the animal look taller and more muscular through the hindquarters. The height from the ground, and length of the tail ball is affected by the length of the tailbone, and height of the animal.
4. This section needs practical demonstrations. It is difficult for members to picture what is going on from the descriptions and directions.

5. Have members go to livestock shows and see how animals are prepared. Include a trip through the barns prior to the classes.

Discussion Questions:

1. What needs to be done to an animal before it is shown?
2. How long before the show should this work be started?
3. Why are these things done?

Answers to Project Book Questions:

1. Scotch comb
Curry Comb
Clippers
Adhesive
2. Scotch comb - brushing the animal
Curry comb - brushing the animal
Clipper - for trimming hair
Adhesive - to keep tailball in place
3. Rope halters swell when wet and may get tight on the animal's head.
4. Be careful not to get water inside the ears or the head will be held lopsided.
5. When brushing the animal, brush the hair upward and back.
6. Blow dry in the same direction as you brush.
7. Flathead Clippers
8. Clipper oil.
9. To make the animal look better muscled through the hindquarters and taller.
10. Boning the legs, is making the hair stand up on the legs. This is done by running saddle soap down the legs, then rubbing it in. Use the Scotch comb to comb the hair upward.

SHOWMANSHIP

Objectives:

1. To show the project animal at Achievement Day.
2. To stand the animal properly.

Activities:

1. Demonstrate:
 - use of the showstick
 - showing the animal to the Judge.

Main Points:

1. Good showmanship, displays your animal at its best. It is necessary to have your animal well prepared, then show its best qualities to the judge. This requires good handling and careful planning. The showing is not a place to go for a rest.
2. Demonstrate the skills to the members and have them practice at home. It is the only way to learn. Learning is faster if another person acts as the judge while they practice.

Discussion Questions:

1. What needs to be done to prepare your animal to be shown?
2. What is the show stick used for?
3. What is the correct way to use the show stick?
4. Do you set an animal up on level ground or uphill?
5. Where should you stand as your animal is being judged?

Answers to Project Book Questions:

1. Leadshank not held properly.
Incorrect use of the showstick.
Animal not squared up.
Animal standing downhill.
2.
 - Proper feeding
 - Training to lead
 - Training the hair coat
 - Training to show equipment
 - Trimming hooves
 - Clipping
 - Washing
 - Grooming
3. The show stick is used to move the feet and rub the underside.
4. The ringmaster or judge will signal you when and where to move your animal.
5. Continue showing your animal. The animal can relax slightly as the judge gets further away. The animal should remain squared up.
6. You can stop showing your animal when you leave the ring.

MEATS

Objectives:

1. To list the cattle carcass grades.
2. To identify the color of stamp used for each carcass grade.
3. To determine dressing percentage.
4. To identify main carcass cuts.
5. To list cattle carcass by-products.

Activities:

1. Visit a butcher's shop and look at carcasses. Make note of the grade in relation to carcass age look at cartilage, marbling, fat cover, meat color and texture. Look at main cuts.
2. Make a list of what each half of the animal can be cut into.

Main Points:

1. Carcasses are assigned one of sixteen grades. Most young animals grade "A". Reasons for a young animal not grading "A1" or "A2" include:
 - coarse texture
 - dark color - This is not a problem except the buyer selects against it. It is usually caused by the animal being excited at the time of slaughter.
 - early maturing
 - inadequate or excessive external body fat
 - inadequate marbling
2. There are two major groups of cuts available:
 - a. Wholesale cuts - chuck
 - brisket
 - rib
 - plate
 - loin
 - sirloin
 - flank
 - hip
 - b. Retail cuts - the wholesale cuts are reduced to proportions the consumer will buy (roasts, ribs, stewing meat, steaks).
3. Parts of the carcass not used for human consumption are used in the making of a wide variety of products that do not resemble their source.

Discussion Questions:

1. How is meat graded?
2. Why is meat graded?
3. What is the dressing percentage?

4. What are the wholesale beef cuts?
5. What are the forms that we buy beef in?
6. What other products are made from the animal carcass?

Answers to Project Book Questions:

1. Bone, muscle, fat
2. "B" describes the carcass quality.
"3" is the amount of the carcass expected to be saleable.
3. Grocery store or butcher's shop.
4. Any of the by-products listed in the project book.

HOW TO ORDER AUDIO-VISUAL MATERIALS

1. All requests should be sent to:

Film Library, Communications Branch
Agriculture Building, 7000 - 113 Street
Edmonton, Alberta T6H 5T6

2. All films must be ordered by memo or letter. No phone orders or phone enquiries on film availability will be accepted.
3. Films must be booked at least 2 weeks in advance and not more than 3 months in advance.
4. Except for special circumstances, films should not be booked for more than 1 week at a time.
5. Only requests with specific viewing dates will be filled.
6. All films should be checked immediately on receipt. If damage occurs, do not attempt to repair, but loop film around reel and report the damage to the Film Library.
7. Films should be rewound after the final showing. All films, slide sets and video tapes should be returned in their proper containers.

420/12

ANOTHER SIDE OF BEEF

This film was produced for the Alberta Cattle Commission to look at the beef industry in Alberta.

Color	29 min.	1974	Century II Motion Pictures Limited CLEARED FOR TELEVISION
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420 G SSK

ALBERTA'S BEEF INDUSTRY - FROM PRODUCER TO CONSUMER

This kit follows the beef animal from calving to cutting up.

181 slides	script	1974	Alberta Agriculture
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400/31

CROSSBREEDING, PRECONDITIONING BEEF CATTLE AND TESTING GRAIN AND FORAGE FEED VALUE

This film shows the effects of preconditioning. The program was carried out by ranchers in Bitterroot, Montana.

Color	22 min, 30 sec	1968	John Deere Company NOT CLEARED FOR TELEVISION
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420/18

CROSS BEEF COWS WITH LIMOUSIN BULLS?

This short film shows the possible results of crossing limousin bulls and beef cows.

Color	8 min.	1970	John Deere
			NOT CLEARED FOR TELEVISION

420 C SK

BEEF CONFORMATION

A study done at Iowa State University between two types of steers. Examines the body structure and how it relates to the quantity of fat produced by the steer.

25 slides	script	Iowa State University
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420-75 SSK

"IDENTIFICATION SYSTEMS FOR BEEF CATTLE"

The kit talks about methods available to the commercial herd operator who wants to implement a system of identification for his herd which provides 'at-a-glance' information on off-spring and cow status.

66 slides	Color	1982	Alberta Agriculture
			(Complete with cassette and script)

429 VT

"GROWTH IMPLANTS"

A national 4-H meet, Animal Science Project. (For use by Agriculture Field Staff ONLY)

3/4" video tape cassette	1980	International Mineral & Chemical
14:11 minutes, color		NOT CLEARED FOR TELEVISION

368-2

A SIXTH SENSE

Handling livestock presents dangers. The individual involved with animals needs an awareness - a sense - of those dangers. You might call it a 'sixth sense'. Alberta farmers give testimonials on the dangers of handling livestock.

Color	15 min.	1979	Douglas Film Group
			CLEARED FOR TELEVISION

620

BITING FILES

The film gives the history of the biting flies and their life cycles. It outlines the research for repellents, insecticides and larvacides, and shows fogging from trucks and airplanes.

B&W	6 min	1959	National Film Board for Agriculture
			Canada. NOT CLEARED FOR TELEVISION

657 SSK
WARBLE CONTROL

61 slides script 1977 Alberta Agriculture

655/400
CATTLE WARBLE FLIES

"Cattle Warble Flies" is a film for livestock producers describing the parasitic habits of cattle warbles, the damage they cause annually to the cattle industry, and control measures being taken in Canada. The life cycle of cattle warbles is shown in detail.

Color 18 min 1968 Charles Beddoe
NOT CLEARED FOR TELEVISION

657/400
CO-RAL

Commercial film on warble control. Different methods of application of the chemical to control these pests are demonstrated.

Color 20 min 1968 Calvin Films
NOT CLEARED FOR TELEVISION

407
THE REMARKABLE RUMINANTS

The basic structures and functions of a ruminant's digestive system is outlined in simple, understandable terms in this film. General interest.

Color 23 min 1973 Ralston Purina
NOT CLEARED FOR TELEVISION

402
FEED AND SOIL TESTING

In feed and soil testing laboratories, a feed sample and a soil sample are respectively followed through their analysis with the importance of each procedure explained. Feed and soil sampling and preparation for shipment are demonstrated. The value of feed testing for the livestock producer and soil testing for the grain farmer are emphasized.

Color 14 min 1981 Saskatchewan Department of
30 secs Agriculture, CLEARED FOR TELEVISION

420/30
PRACTICAL BEEF

The key to successful beef production is the calves' ability to produce quality beef from new resources. The cattle industry is specialized with the two basic types of operation being the commercial and the purebred breeding herd.

Color 20 min 1968 Federal Department of Trade and
Commerce with the cooperation of the
Canadian Hereford Association
NOT CLEARED FOR TELEVISION

420/25

THE FINAL 30 DAYS

One 4-H activity is showing cows or bulls at achievement day. The final 30 days in preparing the animal for the show are covered.

Color 26 min 1978

Century II Motion Pictures
CLEARED FOR TELEVISION

420 VT

CHOICE CUT

The demand for protein and top quality beef concerns us all. With this in mind, the entire beef industry from ranch and feedlot to meat packer and butcher are discussed.

3/4" video tape cassette 1973
30 minutes, color

British Columbia Department of
Agriculture

420 F SK

NEW BEEF GRADING SYSTEM

The grading system is explained. Why a portion of beef does not meet the requirements for Grade A is examined.

31 slides script

Alberta Agriculture

420/46

NEW BEEF GRADES

Explains Canadian beef grading system introduced in 1973.

Color 7 min 1975

Agriculture Canada
CLEARED FOR TELEVISION

420-73 SSK

IDENTIFYING THE CUTABILITY OF LIVE BEEF CATTLE

A detailed look at parts of the live animal's body that are helpful when estimating cutability.

45 slides script 1971

Dr. R. Long & Dr. J. Everly,
Illinois

420/73

THE STORY OF MEAT IN CANADA

"The Story of Meat in Canada" traces the journey of beef, lamb and pork from buying and feeding to marketing and packaging for the consumer. The importance of high quality stock and good feeding and handling methods is emphasized.

Color 30 min 1962

Crawley Films Canada
NOT CLEARED FOR TELEVISION

420/31

MONARCH OF MEAT

It is very important that consumers have some knowledge of beef cuts. The economics of production and marketing are given and beef grading is demonstrated. A comparison is drawn of 'freezer buying' and 'over the counter buying'. Quantity purchases are related to family size.

Color 16 min 1971

Saskatchewan Department of Agriculture
CLEARED FOR TELEVISION

420

WINTERING THE BEEF HERD

Wintering the beef herd requires the growing and proper ensilage of forage crops; good fodder reserves should last until spring pasture is ready. Rations and additives are considered. How much is it economical to pay for different quality hays?

B&W 30 min 1966

This Business of Farming Program
NOT CLEARED FOR TELEVISION

PUBLICATIONS

The following publications are available from Alberta Agriculture through your District Agriculturalists office.

420/662-2	Alberta Certified Preconditioned Feeder Program (1982)
420/662-3	Preconditioning - Will it Pay the Producer as Well as the Feeder? (1982)
420/816-2	Feeder Cattle: What Can You Pay (1981)
400/34	Registration of Animals in Canada (1982)
420/41-3	Beef Cattle Performance Selection (1972)
420/35-4	Postweaning Growth and Carcass Traits of Yearlings from Red Angus and Beefmaster Sires with Exotic First-Cross Dams (1977)
420/42-1	Preweaning and Postweaning Performance of Progeny Sired by Charolais, Simmental and Chianina Bulls mated with Exotic First Cross Dams (1979)
420/41-12	Beef Cattle Performance Test 1978-79 Annual Report
420/42-3	Carcass Characteristics of Progeny Sired by Charolais, Simmental, Limousin and Chianina Bulls Mated with Exotic First-Cross Dams (1979)
420/35-3	Reproductive Performance of Foreign x Domestic Hybrid Cows Under Two Management Systems (1977)
FS 420/56-1	Supplemental Feeding of Yearlings on Pasture (1982)
420/10-3	Managing Yearlings on Pasture (1982)
FS 420/42-1	Identification Systems for Beef Cattle (1978)
FS 420/662-1	Disease Control Calendar for Beef Cattle (1980)
420/651	Control of Cattle Grubs in the Prairies (1974)
FS 420/651-1	Warble Control in Alberta (1981)
FS 420/651-2	Control of Cattle Lice (1980)
FS 651	Chemical Control of Cattle Insects (1980)
FS 400/663-1	Blackleg and Allied Diseases (1977)

666-1	Basic Animal Health and Techniques (1981)
FS 663-9	Shipping Fever Pneumonia (1979)
FS 663-10	The Story of IBR (1981)
FS 663-11	Pink Eye of Cattle (1981)
FS 663-13	Lungworm In Cattle (1983)
FS 420/52-1	How to Formulate Rations for Beef Cattle (1980)
400/50-2	Protein Sources for Livestock (1973)
FS 400/50-3	Nutrients for Cattle (1979)
400/52	Feeding Cattle on Low Roughage Rations (1967)
420/10-1	Feedlot Finishing of Cattle (1976)
400/716-1	Water Requirements for Livestock (1982)

BEEF MAGAZINES

Canadian Angus News
Box 277, Lethbridge, Alberta T1J 3Y7

Cattleman
1760 Ellice Avenue
Winnipeg, Manitoba R3H 0B6

Beef
1999 Shepard Road, St. Paul, Minnesota 55116

Betterbeefbusiness
P.O. Box 1148, Platte City, Missouri 64079

Canadian Charolais Banner
Bag 200
Lacombe, Alberta T0C 1S0

American Chianina Journal
P.O. Box 890, Platte City, Missouri 64079

Feedlot
Miller Publishing Co.
Box 67, Minneapolis, Minnesota 55440

The Canadian Hereford Digest
Gillmore Publications
5160 Skyline Way, N.E., Calgary, Alberta T2E 6V1

Limousin Leader
Sage Brush Ventures Ltd.
Suite 105, Stockmans Center, 2116 - 27 Avenue, N.E., Calgary, Alberta
T2E 7A6

Main-Anjou International
334 - 9th Avenue, N.E., Calgary, Alberta T2E 0V6

TEXTBOOKS

These are available through the University of Alberta Bookstore or on special order through bookstores.

Anatomy and physiology of Farm Animals, Frandson, Lea & Febiger,
Philadelphia

Animal Nutrition, Maynard and Loosli, McGraw Hill Book Company, Toronto,
Ontario.

Feeds and Feeding. Reston Publishing Company Inc., A Preston-Hall Company,
Reston, Virginia.

Handbook of Livestock Management Techniques, Battaglia and Mayrose, Burgess
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PROPOSED MEETING SCHEDULE

The following outline for meetings may be used. Order films a minimum of one month before the meeting.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
1	<ol style="list-style-type: none"> 1. To identify animals that have been pre-conditioned. 2. To calculate a suitable price to pay for a pre-conditioned calf. 	<ol style="list-style-type: none"> 1. Visit any sources of pre-conditioned calves in your area. 2. Keep track of calf prices for several weeks. If possible get information on the price of pre-conditioned calves in relation to other calves. 3. Use publications available on pre-conditioned calves. 4. See film "Crossbreeding and Preconditioning Beef Cattle and Testing Grain Forage Feed Value" (order early). Order films on implanting. 	<ol style="list-style-type: none"> 1. Attend meeting. 2. Participate in activities 3. Purchase of a calf. 4. Do reading. 5. Do Project Book Questions 6. Provide information for the club Registration Form. 7. Make Record Book entries 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Achievement Day 4. Record Book
2	<ol style="list-style-type: none"> 1. To select and use growth stimulants. 	<ol style="list-style-type: none"> 1. Examine all growth stimulants on the market. Although some are more popular, discuss all types to allow for member choices. 2. Demonstrate implanting. 3. Do first implant at the club weigh-in. 	<ol style="list-style-type: none"> 1. Attend meeting. 2. Do the reading. 3. Do Project Book Questions 4. Attend club weigh-in. 5. Make Record Book entries. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Record Book

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
3	<ol style="list-style-type: none"> 1. To provide project animals with a ration that will meet their needs. 2. Select a winter project. 	<ol style="list-style-type: none"> 1. Compare growth habits of some common forages. 2. Compare hay samples. Develop on the spot methods for determining hay quality. 3. See concentrated rations being prepared. 	<ol style="list-style-type: none"> 1. Attend the meeting. 2. Read the materials. 3. Do Project Book Questions 4. Make record book entries. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Record Book
4	<ol style="list-style-type: none"> 1. To identify and correct nutritional deficiencies. 2. Work on the winter project. 3. Take feed samples. 	<ol style="list-style-type: none"> 1. Have members collect hay samples for analysis. These samples need to be sent to a lab for analysis. Contact your D.A. for information. 2. See one of the films available. 3. Use game "Climb the Nutritional Ladder". 	<ol style="list-style-type: none"> 1. Attend the meeting. 2. Read the materials. 3. Do Project Book Questions 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book 3. Record Book 4. Winter project
5	<ol style="list-style-type: none"> 1. To perform standard practices on cattle including: castration dehorning, hoof trimming. 	<ol style="list-style-type: none"> 1. Demonstrate all of the practices. Local cattle producers may also be involved. 2. Work on the winter project. 	<ol style="list-style-type: none"> 1. Attend the meeting or demonstrations. 2. Read the materials. 3. Do the Project Book questions. 4. Use any necessary practices on their project animals. 5. Work on the Winter Project. 6. Make Record Book entries. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Achievement Day 4. Winter Project 5. Record Book

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
6	<ol style="list-style-type: none"> 1. To recognize common bacterial infections in cattle. 2. To administer drugs. 3. To treat for parasites. 	<ol style="list-style-type: none"> 1. Use demonstrations of treatment and displays of medication to help instruct members. 2. Have your veterinarian talk to the group about pinkeye. 3. Demonstrate injections, use of a balling gun and drenching. 4. Order film. 	<ol style="list-style-type: none"> 1. Attend the meeting. 2. Read the materials. 3. Do the project book Questions. 4. Work on the Winter Project. 5. Make Record Book entries. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Winter Project 4. Record Book
7	<ol style="list-style-type: none"> 1. To identify beef grades used in Canada. 	<ol style="list-style-type: none"> 1. Visit meat shops and butcher shops. 2. Have a meat inspector or butcher in to talk to the group about: <ul style="list-style-type: none"> - price vs. cutability - carcass wastes - inspection practices 	<ol style="list-style-type: none"> 1. Attendance. 2. Read the materials. 3. Do Project Book Questions. 4. Sell "Market" project animals on Achievement Day. 5. Make Record Book entries. 	<ol style="list-style-type: none"> 1. Attendance 2. Project Book Questions 3. Achievement Day 4. Record Book

PROPOSED SCHEDULE FOR PUBLIC SPEAKING TRAINING

This is intended to increase the practice all members have in Public Speaking. The activities are to continue through the club year.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
All Meetings	<ol style="list-style-type: none"> 1. To increase the confidence of members when speaking in public. 	<ol style="list-style-type: none"> 1. At each club meeting a short (less than 5 minute) talk or demonstration be given by a club member. 2. Have members pick, or assign the meeting, the presentation will be given at. 3. Keep a list of possible topics. Members can come up with these. 	<ol style="list-style-type: none"> 1. Choose a topic related to horses. 2. Find information in books and magazines you may use. 3. Write a short talk and practice it at home. 4. Write short notes from the talk that you can follow during talk. 	<ol style="list-style-type: none"> 1. Giving the present-ation.
December	<ol style="list-style-type: none"> 1. To help members choose a topic for a speech. <p>(15 minutes)</p>	<ol style="list-style-type: none"> 1. Work with the members and come up with topics. Break general subject headings down into specific headings. 2. Make up a list of resource materials that are available to club members. 	<ol style="list-style-type: none"> 1. To contribute ideas. 2. To decide on a topic by the next meeting. The speech will be used for the Club Speakoffs. 	<ol style="list-style-type: none"> 1. Attendance
January	<ol style="list-style-type: none"> 1. To select a topic for the Public Speaking Com-petition. 2. To develop an outline for the speech. 3. To give the time limits for speeches. <p>(20 minutes)</p>	<ol style="list-style-type: none"> 1. Discuss what should be included in an Introduction, Body, and Conclusion of a speech. 2. Help members work on an outline for their speech. 	<ol style="list-style-type: none"> 1. To write an outline for their speech. 2. To collect reference material at home, and write the speech. 	<ol style="list-style-type: none"> 1. Completing the outline.

Meeting No.	Objectives	Method	Member Responsibility	Evaluation
February	1. To practice a completed speech. 2. To prepare public speaking note. (30 minutes)	1. Check over the material in the completed speeches. 2. Split the members into small groups (2-4 people) and have them read their speeches to each other. 3. Have the members pick points from their speech to use as notes on notecards when the speech is given.	1. Bring speech to the meeting. 2. Practice reading the speech to a small number of members. 3. Underline important points to be used on notecards.	1. Completion of the written speech.
March	1. To present a speech to the group	1. Give each member an opportunity to speak. 2. Encourage the members. Give help where it is needed.	1. To participate in club practice and in the club competition.	1. Giving the speech.

PRECONDITIONING

Objectives:

1. To list advantages and disadvantages of preconditioning calves.
2. To calculate a suitable price to pay for preconditioning.
3. To increase success rate with purchased calves.

Activities:

1. Attend a cattle sale and compare prices of preconditioned calves to other calves.
2. Have materials on Preconditioning available for members.
 - "ACPF Alberta Certified Preconditioned Feeder Program" (Agdex 420/662-2)
 - "Preconditioning Will It Pay the Producer as Well as the Feeder?" (Agdex 420/662-3)
 - "Feeder Cattle, What Can You Pay" (Agdex 420/816-2)
3. Visit a feedlot that buys preconditioned calves. Discuss reasons for their choice.

Main Points:

1. Many cattle producers have not realized the value of preconditioning calves. Among the most common reasons for not preconditioning is the belief that they will not get back enough to cover the costs of added labor and facilities.

Feedlot buyers are slowly learning that there is added value in buying preconditioned calves. At one time they were unwilling to pay a premium for these calves, but attitudes are changing. The reduced losses due to better health is overcoming buyer resistance.

2. Many of your club members will not be buying their calves from auctions or outside breeders. They can get a calf from their home herd and follow the same practices as the feedlot operator. If possible, run a comparison between preconditioned calves and other calves in the family herd. Because care on the farm is different than in feedlots, the results will not show as large a variation. Some differences should be visible at one year of age.

Discussion Questions:

1. What is preconditioning of beef calves?
2. What are the advantages of preconditioning calves?
3. Is there a price difference between preconditioned calves and other calves?
4. Should there be a price difference between these calves?

5. Why should the buyer pay more for a preconditioned calf?
6. How can you tell if the calf you are buying is preconditioned?

Answers to Project Book Questions:

1. What are two reasons for preconditioning calves?

- calves get used to solid food
- increase level of immunity
- castration
- vaccination
- treatment of parasites
- calves exposed to more health problems when they are vaccinated
- few death losses
- better rate of gain

2. Example

A. Initial Value of Weaned Calf

Calf 221 kg (550 pounds) at \$.68/cwt, October 15, \$374.00 Total A

B. Cost of Calf for 30 Days

Death loss 1% (of purchase price)	<u>3.74</u>
Poor calves .5% (of purchase price)	<u>1.87</u>
Interest for 30 days	<u>4.36</u>
Yardage for 30 days at \$ <u>.08</u> /day	<u>2.40</u>
Bedding	<u>1.00</u>
Antibiotic	<u>1.00</u>
Total B	<u>14.37</u>

C. Vaccination and Parasite Control

Para Influenza 1 dose	<u>1.75</u>
IBR	<u>1.10</u>
Malignant Edema and Blackleg	<u>.50</u>
BVD	<u>.75</u>
Grub and lice control	<u>.50</u>
Worm control <u>thiabendazole</u>	<u>1.60</u>
Spraying or dipping	<u>.50</u>
Handling (veterinary costs)	<u>.50</u>
Total C	<u>7.20</u>

D. Feed Costs

<u>2</u> kg or pounds supplement/day at \$ <u>.15</u> /kg	
or pounds x 30 days	<u>9.00</u>
<u>3</u> kg or pounds concentrate/day at \$ <u>.35</u> /kg	
or pounds x 30 days	<u>10.50</u>
<u>3</u> kg or pounds hay at \$ <u>.03</u> /kg or pound	
x 30 days	<u>2.70</u>
Mineral costs	<u>.20</u>
Total D	<u>22.40</u>

Value of Calf After Preconditioning

Initial Value of Weaned Calf (Total A)	<u>\$374.00</u>
Cost of Calf for 30 days (Total B)	<u>14.37</u>
Vaccination and Parasite Control (Total C)	<u>7.20</u>
Feed Costs (Total D)	<u>22.40</u>

Value of Calf at sale date

Calf <u>560</u> kg or pounds at \$ <u>.74</u> /kg or pound =	<u>414.40</u>
Difference	<u>0</u>

3. Would you expect the calf to have a better rate of gain than other calves brought in for feeding? Why?

Yes. Already adjusted, less stress. As a result there would be fewer health problems.

4. How much more is being charged for preconditioned calves in your area? What are the costs?

Individual answer.

5. Is preconditioning worth the extra cost to you?

GROWTH STIMULANTS

Objectives:

1. To select growth stimulants.
2. To correctly administer growth stimulants.

Activities:

1. Demonstrate the methods for doing common implant products
2. See: "A Change for the Better (Ralgro) Growth Implants, National 4-H Meat-Animal Science Project" (from 4-H Office, Edmonton).
3. Set up a display with growth stimulants (and equipment) or empty packages with the information.
4. Implant clinic for members.

Main Points:

1. The use of implants has increased over the years. While they do not solve problems caused by poor feed or lack of feed quality, they can improve the feed conversion efficiency of an animal. This means that the producer can feed slightly less, and keep the same gains or feed at the same level and have slightly higher gains.
2. Implants are not the only way to administer growth stimulants. Feeding supplements is also possible. Choose a method that suits the member.

Discussion Questions:

1. How are growth stimulants given to cattle?
2. Why do producers use growth stimulants?
3. What are examples of growth stimulants?
4. What are the two types of Synovex?
5. How do you decide which one to use?
6. How long do implants work after they are administered?

Answers to Project Book Questions:

1. What are the main effects of growth stimulants?
 - Feed efficiency increases
 - Growth rate increases.
2. How much feed can be saved for each 100 kg of weight gain?
 - 40 - 50 kg
3. How much money could you expect to save feeding an implanted steer (weight gain, 400 kg)? Do minimum and maximum savings.

$$\text{feed cost } \$/\text{kg} \times 4 \times \text{kg saved} = \text{cost of feed saved}$$
 - * Determine an average feed cost for roughage and grain, all members use the same figures. Use current costs for the ration.
4. Do you think this makes it worthwhile?
 - Individual answer.
5. What would it cost to use a feed additive instead of an implant?
$$\text{cost per feeding} \times \text{number of feedings} = \text{cost}$$
6. By comparing cost which would you use, an implant or a feed additive?
 - Individual answer.
7. Which would you use; an implant or a feed additive? Why?
 - Individual answer.

FEEDS AND FEEDING

Objectives:

1. To explain the value of roughages in the ruminant diet?
2. To recognize common forages (local).
3. To select roughages for cattle diets.
4. To recognize feed grains.
5. To select grain for a ration.
6. To list supplements available for cattle.
7. To supplement a cattle diet balanced for energy.

Activities:

1. Bring in grass seed, legume seed and flower pots (with soil). Have members look at the seed. Plant the seed, one variety per pot. Label the pots. Have the members take these home and grow them. Samples will be brought back when the plants are two months old. Compare the height, amount of leaf, etc.
2. Bring in hay samples. See how many the members can identify. (Spread garbage bags containing samples out on the tables. This can be messy). Discuss color, leaf/stem ratio, odor in identifying good hay.
3. Use publications for working on feeds.
4. Visit a feed mill to see feeds available and if possible, rations being mixed.

Main Points

1. Roughages are essential for the ruminant. Without them, or with them at low levels, digestive problems can occur. This is because there is not enough bulk (fiber) to promote normal food movement through the digestive tract.

In general cattle can do well on rations containing straw or poor quality hay. Exceptions to this are when animals are in poor body condition and during very cold weather. If these roughages are put through the hammermill or tub grinder, the number of impactions will increase when the temperature drops. Ammoniation of straw is an option. It will increase the energy and protein in the feed. (Information from the Nutrition Section, Animal Industry Division, Alberta Agriculture).

Part of the problem with feeding in winter is that cattle will eat more in cold weather as they try to get more energy (produces heat) from the feed. A common mistake in winter feeding is increasing the protein level instead of the energy level.

2. Recognizing quality feeds takes experience. Your members may or may not get this at home. Take the time to go through this carefully. Include different quality samples of the same roughage.
3. Buy hay on the basis of weight, not by the bale. Bale weights vary considerably because of:
 - type of roughage
 - hay supply
 - moisture content
 - tightness of material packed into the bale
 - age of the bale (bales are lighter if they are stored for over a year)
 - which hay cut (first or second) the bales are from

4. Most roughages are low in protein. Others are low in protein and energy. Unless you need to add energy to the ration, it will be less expensive to feed a protein supplement instead of more grain.
5. Alfalfa is priced according to its value in a dairy ration. The value of feeding alfalfa or alfalfa-grass hay will vary according to the rest of your ration. The legume is worth more to you if it is supplying your ration with protein.
6. Supplements of some type are always required. The most common are salt and minerals. However, feed is often lacking something else. The most common supplements are for energy and protein. Often one supplement is a better price than another. Unfortunately, we do not always buy according to price. An expensive supplement may be in a form that is not suited to our feeding practices. Practicality of different supplements needs to be learned by your members.

Discussion Questions:

1. Why do you feed your cattle?
2. What can you feed to supply the animal with those nutrients?
3. What are the forms that roughages can be fed as?
4. What types of cut roughages can be fed?
5. Why can cattle get sick on a ration that has small amounts of roughage?
6. How should cattle be fed during cold periods in the winter?
7. Why do cattle that are fed straw or poor quality hay get impactions in cold weather, but rarely at any other time?
8. Why is alfalfa hay so popular?
9. Why is grain fed to cattle?
10. Which costs more per kilogram, grain or hay? Why?
11. Why will cattle on high grain rations get sick?
12. Why do grains need to be treated before they are fed to cattle?
13. What happens to the grain if it isn't treated before it is fed?
14. How can grains be treated?
15. What grains are usually fed to cattle?
16. Which supplements act like laxatives?
17. What supplements will give the coats of your cattle a good shine?

18. Why is fat added to commercial rations?
19. Which protein supplement should be more expensive; soybean or canola? Why?
20. Which protein supplements are palatable? Which are not?
20. What is a complete feed?

Answers to Project Book Questions:

1. What are four examples of roughages?
 - grass
 - cereal crop
 - native grass
 - legume
 - forbes (any non-woody broadleaf plant).
2. Why do ruminants need bulk in their diet?
 - For normal movement of food through the digestive tract.
3. Roughages are usually low in protein and phosphorus.
4. What are some of the hay types fed in your area?
 examples: alfalfa timothy
 brome wheatgrass
 clover ryegrass
5. On a kg/kg basis, which is more expensive; roughage or grain?
 - grain
6. What grains are fed to cattle?
 - corn
 - barley
 - oats
 - wheat
 - rye
7. Why are grains fed to cattle?
 - as an energy supplement.
8. What are three treatments used for grains (and/or roughages) to improve the digestibility?
 - rolling (crushing)
 - hammer mill breaking
 - pelleting
9. Why are supplements added to a ration? Give an example of when a supplement would be fed?
 - They are added to supply specific nutrients.
 - A supplement can be fed to any cattle. Judge the member answer yourself.
 - Examples: Protein supplement to cows on straw or poor quality hay.
 Minerals for yearlings on pasture.
 Protein to young calves.

10. What is a complete feed?
 - A complete feed is a ration that supplies all of the required nutrients.

11. What are the current prices for the following?

oats _____
 barley _____
 wheat _____

Which one is the best value as an energy source? _____

oats _____ - 3.3 = _____

*price

oats _____ - 2.75 = _____

barley _____ - 3.0 = _____

wheat _____ - 3.18 = _____

* price = price/bushel - pounds or kg/bushel

12. What are the current prices for the following protein (nitrogen) supplements?

soybean meal _____
 canola meal _____
 urea _____

Which one is the best value as a protein supplement? _____

* price = cost/kg

soybean meal _____ - 42.6% = _____

canola meal _____ - 35.75% = _____

urea _____ - 45% = _____

FEED SAMPLING

Objectives:

1. To have feeds of unknown quality analysed early in the feeding period.
2. To make more efficient use of available nutrient sources.
3. To prevent nutrient deficiencies.

Activities:

1. Demonstrate how to take hay samples.
2. Have all of the members take roughage samples and send them in for analysis.

Main Points:

1. Feed sampling should be done yearly. The food value varies every year and from field to field.

Damage to the feed or weeds will affect the feeding value.

NUTRITION

Objectives:

1. To identify the most common nutritional deficiencies found in cattle.
2. To correct nutrient deficiencies.

Activities:

1. Have your D.A. come and talk to the club about how to take a proper forage sample (for analysis).
2. Have a feed analysis done on each members roughage.
3. See films "Feed and Soil Testing" and/or "Wintering the Beef Herd".
4. Games "Climb the Nutritional Ladder"
"Grassland Game"

Main Points:

1. Proper nutrition is necessary to the good health and maximum productivity of livestock. Losses occur through slow weight gains, low milk production, abortions, infertility, etc.
2. Feed quality varies with the moisture, soil, feed type and length of storage.
3. In Alberta we are concerned primarily with:
Vitamin A
Iodine
Selenium
Calcium, Phosphorus

These nutrients are most likely to be lacking (or not properly balanced) and need to be supplemented. Minerals are generally supplemented (free choice) to avoid any other deficiencies.

If you have your feed analysed, that information is only correct for that year. Because our weather is different every year the nutrient level will also be different. Have a new analysis done each year.

4. Vitamin B is not covered with the other vitamins in this section because it is not necessary in the diet. Except during the first eight weeks of life, B vitamins are synthesized by the rumen bacteria.
5. Do not try to cover this material at one meeting. There is too much material to cover, do vitamins at one meeting, minerals at the next. Use the games. This is a very dry section otherwise.

Discussion Questions:

1. What is a deficiency? (a shortage of a necessary nutrient item)

2. What happens when there is a nutritional deficiency? (the animal shows disease symptoms)
3. What feed part becomes Vitamin A? (carotene)
4. What feeds supply Vitamin A? (roughages)
5. What are symptoms of a Vitamin A deficiency?
6. How can cattle be supplied with extra Vitamin A?
7. Where do animals get Vitamin D? (sun cured roughages)
8. What are symptoms of a Vitamin E deficiency?
9. What is Vitamin K needed for?
10. What are essential minerals? (those needed to perform specific functions)
11. What is the difference between major and trace minerals? (needed in large amounts/small amounts)
12. What effects how much mineral the animal needs?
13. Where in the body do you find most of the calcium and phosphorus?
14. Where else do you find calcium and phosphorus in the body? (blood contains both)
15. What are symptoms of a phosphorus deficiency?
16. What supplements can be used to supply calcium and phosphorus? (dicalcium phosphate, bonemeal)
17. Do roughages have more calcium or phosphorus?
18. Do concentrated feeds have more calcium or phosphorus?
19. Why is salt fed free choice? (animals only eat as much as they need)
20. What happens if cattle are fed salt, but can not always get water? (sick, salt toxicity)
21. Why don't we feed cattle white salt like ours? (need iodine)
22. What is grass tetany, and what causes it?
23. What are the trace minerals?
24. Which trace minerals are cattle most likely to be short of? (selenium, copper)

Answers to Project Book Questions:

1. You sent a hay sample to the lab to be analysed. The results show that the hay is lacking in carotene. What Vitamin should you start giving your cattle?
- Vitamin A
2. When is Vitamin A particularly important to cattle?
- Late in the feeding season, during pregnancy and lactation.
3. List two methods of supplying your cattle with Vitamin A. Explain how often it should be given.
- Injectable Vitamin A - injected every 2-3 months
- Dry Vitamin A - mixed with grain
4. Which vitamin is called the "Sunshine Vitamin"?
- Vitamin D
5. List two symptoms of a Vitamin D deficiency.
- Poor appetite
- Decreased growth rate
- Poor bone growth
- Difficulty breathing
- Poor fertility
- Poor production
- Stiff gait
- Weak bones in older animals

MINERAL DEFICIENCIES

1. It is important that the ratio of calcium to phosphorus be correct.
What is the ratio?
2:1
2. What is Rickets?
A phosphorus deficiency that causes enlarged joints, mishappen bones and a slightly arched back.
3. Roughages are good sources of calcium/phosphorus and grains are good sources of calcium/phosphorus. (underline correct answer)
4. What must you always have available when salt is being supplied to cattle?
Fresh water
5. What two factors increase an animal's need for salt?
- lactation, rapid growth, hot temperatures, heavy work
6. What condition may occur if cattle have a low level of magnesium in their blood?
Grass tetany
7. What are three symptoms of a copper deficiency?
- black hairs turning a rusty-brown color
- fading hair color
- anemia
- infertility
- scouring
- heart failure

8. What trace mineral can be toxic or deficient?

- Selenium

9. A selenium deficiency can cause white muscle disease.

10. If your area deficient in Selenium? (Individual answer)

If so, are you feeding or injecting Selenium to compensate for the deficiency? (Individual answer)

CLIMB THE NUTRITIONAL LADDER

The object of the game is to climb the ladder from the feed to the feed trough. Start on #1.

One member will act as monitor to tell the players if the answer is right.

Members take turns picking up a "Question Card". If the question is answered correctly the member moves up one rung on the ladder. If the question is not answered correctly it is passed to the member whose turn is next. The last person to finish becomes the new monitor.

(any objects may be used to identify players on the ladder).

MONITOR SHEET

Quality in feed goes down when the feed is stored.

Vitamin A

Carotene or _____

Vitamin A

This is analysed in feed to determine the amount of Vitamin A.

Carotene

1 mg of B-carotene is equal to 400 IU of Vitamin A.

A vitamin A deficiency will cause

retained placentas	blindness
abortion	paralysis
infertility	convulsions
convulsions	blindness
birth defects	diarrhea
	edema
	lameness
	pneumonia
	dandruff
	thickened cornea

The fetus uses vitamin A to form bone and/or skin.

How can cattle be supplied with vitamin A?

injection
dry supplement

The sunshine vitamin.

Vitamin D

Affects the absorption of vitamin A.

Vitamin D

Animals kept indoors may need this vitamin.

Vitamin D

Fish liver oils supply _____.

Vitamin D

What deficiency causes White Muscle Disease?

Vitamin E
Selenium

Major mineral.

Calcium
Phosphorus
Sodium
Potassium

Sulfur
Chlorine
Magnesium

Trace mineral.

Iodine
Iron
Zinc
Manganese
Cobalt
Selenium
Copper
Molybdenum

Nickel
Chromium
Fluorides
Tin
Silicon
Vanadium
Arsenic

What affects the animals need for a mineral.	Species of the animal Sex of the animal. Size of the animal. Stress of the animal. Type of animal. Animals rate or production Amount of other nutrients in the diet.
The body has more of these than any other minerals.	Calcium and Phosphorus
Where is most calcium and phosphorus found in the body.	bones and teeth
<u>Phosphorus</u> is found in body enzymes.	
The best source of calcium and phosphorus is <u>milk</u> .	
Vitamin D affects the use of <u>calcium</u> .	
Which is more common a calcium or phosphorus deficiency?	phosphorus
What are signs of a calcium deficiency?	slow growth rate poor tooth development decrease in milk pro- duction decreased fertility milk fever
Milk fever is caused by a <u>calcium</u> deficiency in lactating cows.	
What is pica?	Animals eating wood, dirt, etc.
What deficiency causes rickets?	phosphorus
What is the proper ratio of calcium to phosphorus?	2:1
What supplement can be fed to supply calcium and phosphorus?	dicalcium phosphate bonemeal
Roughages are (high/low) in calcium.	high
Grains are (high/low) in calcium.	low
Legume hay is (high/low) in phosphorus.	low
Sodium and chlorine are supplied by <u>salt</u> .	

How is salt fed?

free choice
mixed in feed
salt block
loose salt
in a mineral mix

What type of salt is red?

Iodized

What type of salt is blue?

Cobalt iodized

What affects the amount of salt an animal needs?

lactation
rapid growth
hot temperatures
heavy work

Salt is toxic if water is not available.

What deficiency causes grass tetany?

magnesium

What is a symptom of grass tetany?

loss of appetite
restlessness
nervousness
convulsions
twitching of the muscles
staggering gait
falling

When do cattle get grass tetany?

supplemented with hay or grain
when on lush pasture

Iron is needed for hemoglobin.

An iron deficiency will make an animal anemic.

Hair color will fade if the diet does not have enough copper.

If calves are born with stiff, enlarged joints and twisted legs, they likely have a manganese deficiency.

Iodine is needed by what gland?

thyroid

Calves born with no hair have an iodine deficiency.

If the hair falls off the tail of an animal, it has a _____.

Selenium toxicity

What is a toxicity?

The body gets too much of something and becomes ill.

When will you see a selenium toxicity?	on overgrazed pasture containing milkvetch
What deficiency causes White Muscle Disease?	Vitamin E Selenium

Objectives:

1. To describe the methods for castration that are used.
2. To castrate an animal using the knife method.
3. To castrate an animal using an emasculator.
4. To castrate an animal using a Burdizzo.

Activities:

1. Demonstrate the knife and Burdizzo method of castration. (The other methods may be demonstrated if they will be used).
2. Members castrate a calf.
3. Have your veterinarian talk to the group about castration, and demonstrate one method.

Main Points:

1. Castration of male animals not used for breeding is necessary. It is economical to raise steers although a number of arguments have been raised. One, is that bulls have a faster rate of gain. While they may be possible, the animal will be done-graded at the time of slaughter, bringing a lower price. In relation to management, bulls are less safe than steers. When they reach breeding age, they may become more active physically, so that weight loss may occur.
2. Castration causes a physical shock to the calf. There is a period of time after castration when the rate of gain decreases noticeably. The time period is shorter with a younger animal.

Discussion Questions:

1. Why are calves and young bulls castrated?
2. Is it easier on the animal to be castrated when it is very young or past weaning age?
3. What is a "staggy" steer?
4. Why are "staggy" steers a problem to the cattle producer.
5. What time of year should castration be done?

6. What are the different methods of castrating a steer?
7. What is the advantage of the _____ method? How is it done?

Answers to Project Book Questions:

1. What is castration?
 - The surgical removal of testicles from a male animal.
2. When should surgical castration be done? Why?
 - Early spring or late fall, to reduce the problem of flies spreading infection.
3. Why is the spermatic cord crushed after it is cut during surgical castration?
 - To begin the blood clotting process by crushing the blood vessels to the testicle.
4. How can bleeding be reduced in older animals?
 - Use a Versaclip or Ligaclip as well as the hemostat.
5. What problems can occur when a Burdizzo is used for castration?
 - The scrotum may slough off and the cord may not be completely crushed so the animal is "staggy".
6. Why is the emasculator not a popular method of castration?
 - Tetanus is possible if the bottom of the scrotum atrophies and falls off.

DEHORNING

Objectives:

1. To describe the methods for dehorning cattle.
2. To select a suitable dehorning method for an animal.
3. To dehorn an animal.

Activities:

1. Demonstrate dehorning. Do chemical, electric and gouge in the spring, and the other methods in the fall.
2. Demonstrate methods for stopping bleeding.

Main Points:

1. It is to the advantage of all cattle producers that all animals be dehorned. Dehorning makes animals safer to handle, reduces the length (number) of feeding facilities and reduces economic damage (carcasses and facilities).

2. The method used for dehorning is determined by the size of the horn and age of the animal. There is less pain for the animal if it is dehorned when it is young. When dehorning young cattle, the horn is softer and can be destroyed without opening a passage for infection into the skull.
3. Older animals are more likely to have problems related to dehorning. A local anesthetic should be used on larger animals. Pain will make work difficult otherwise (even if a headgate is used).

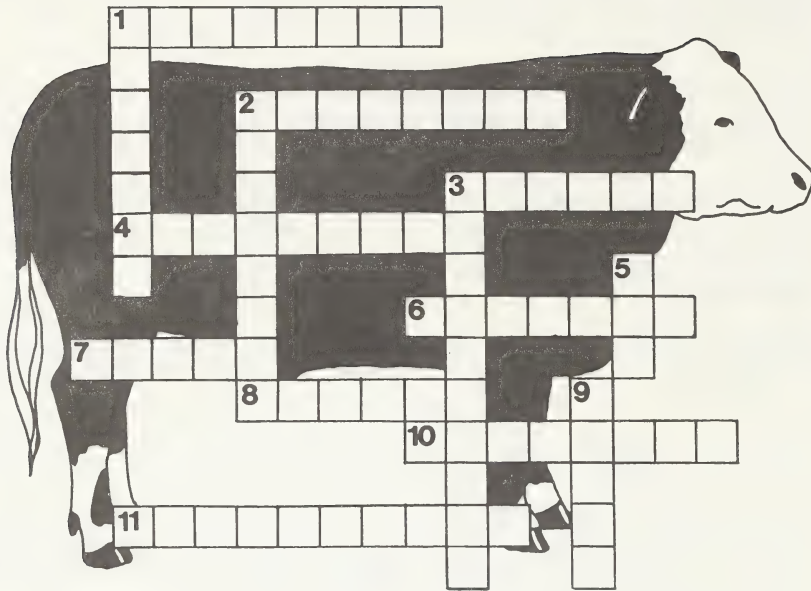
The resulting wound is also larger on older animals. This increases the risks of excessive bleeding and infection. The wound is more likely to need packing with gauze or breaking the artery in the soft tissue of the head.

4. Animals should be kept quiet after dehorning is done. Clotting will be delayed if the animals are moved around or excited within an hour of dehorning.

Discussion Questions:

1. Why are cattle dehorned?
2. How can the horns be removed from calves?
3. How can the horns be removed from older cattle?
4. Why are different methods of dehorning used?
5. What are two common problems after dehorning?
6. How can bleeding be controlled?
7. Why can an infection after dehorning be serious?
8. What should be done if the wound gets infected?

Answers to Project Book Questions:



Across

1. Using clippers to dehorn can crush and splinter the horn if you are not experienced.
2. Carcass bruising can happen when you transport horned cattle to market.
3. The main artery to the horn may still pump blood after the horn is removed.
4. Older cattle may get an infection in the frontal sinus cavity after they have been dehorned.
6. A mixture of one part vinegar to three parts water can be used to treat burns from chemical dehorning.
7. A spoon can be used to dehorn calves with less than 3.5 cm of horn.
8. The gouge is not painful for dehorning calves.
10. The horns of calves two to five months old may splinter when they are dehorned.
11. A local anesthetic should be used when dehorning older cattle.

Down

1. When chemically dehorning cattle you use a caustic potash stick or paste.
2. Bleeding can be a problem after dehorning.
3. After dehorning, the horn cavity may be treated with an antiseptic.
5. A saw is used to dehorn cattle with horns that are too large for clippers or can not be cut with clippers because of their shape.
9. A knife is another name for the gouge or spoon.

HOOF TRIMMING

Objectives:

1. To care for the feet of cattle.
2. To safely trim the hooves of a project animal.

Activities:

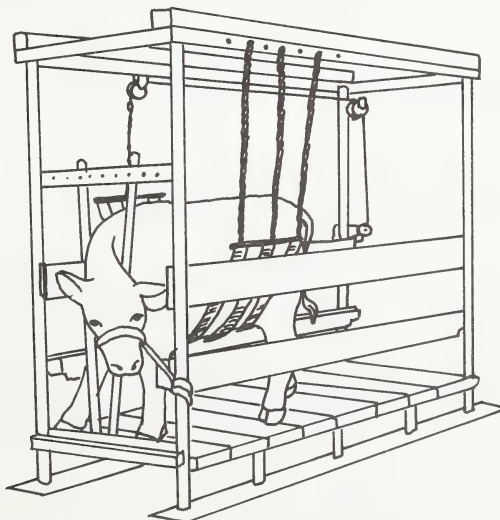
1. Demonstrate one or more methods of hoof trimming. To see a tilting table used, you may contact a dairyman in your area. Dairy cattle need more regular hoof care than beef cattle, so many have someone in to do the work.

Purebred beef producers who show cattle may be used to demonstrate trimming with a chute or by casting an animal.

Main Points:

1. Animals that will be shown should have their hooves trimmed. This will help the animals in the placings by improving the way they stand.
2. Restraint is very important when trimming hooves. Incorrect use of equipment can injure the animal.

In the trimming chute, a common mistake is to put too much pressure on the belts. This lifts the animal off of its feet. Most cattle will panic if this happens. If they start to thrash around in the chute, they may break a leg.



Ropes are used to hold the leg up in a trimming chute. The rope is placed between the dewclaw and the hoof. Most animals will try to pull the leg away from you as it is lifted. Have another person apply pressure above the hock to stop the kicking. Keep the pressure on the hock until the hoof is trimmed. The rope must be held firmly or hair will wear off as the animal kicks. To keep the foot steady for the person trimming, set the leg on the side board of the chute and secure it with the rope.

Tilt tables are excellent when used properly. Make sure the table is secured before you begin work so it will not tip over when it is tilted. Animals can not be left in the horizontal position for any length of time because it stresses their internal organs.

3. Care needs to be taken that hooves are not trimmed too short. To reduce the chances of this, take small, short cuts with your equipment. It is possible to do more shortening, but not add to the length. Very little trimming is needed at the heel. Trim the sides of the hoof and the toe. Stop trimming when "pink" shows. If you trim any further, you will draw blood.
4. After trimming, the feet are sensitive. Animals may limp for several weeks because the sole of the foot is tender. If possible, keep animals in a clean, dry area where there is little chance of damaging the foot.

Discussion Questions:

1. Why are cattle hooves trimmed?
2. Would a producer trim a cow herd regularly? Why?
3. Would a producer trim a bull's hooves? Why?
4. Why are dairy herds more likely to be trimmed than a beef herd?
5. What equipment can be used to trim hooves?
6. How much hoof growth can be trimmed off?
7. What foot problems do you look for when you trim cattle hooves?
8. What can be used to treat cattle if you trim too much and cause bleeding?
9. Why are cattle more comfortable on soft ground after their hooves are trimmed?

Answers to Project Book Questions:

1. Why do hooves need trimming?
 - To prevent lameness caused by long feet and related hoof damage.

2. What equipment can be used to trim hooves?
 - hammer and chisel
 - hoof knife
 - hoof nippers
 - rasp
 - grinder
3. How can animals be restrained for hoof trimming? (two examples)
 - trimming chute
 - rope and halter
 - tilting table
 - laid down with a rope harness

CATTLE DISEASES: BACTERIAL

Objectives:

1. To identify bacterial diseases of cattle.
2. To recognize pinkeye.
3. To treat pinkeye.
4. To prevent pinkeye.
5. To recognize foot rot.
6. To treat foot rot.
7. To prevent foot rot.
8. To recognize wooden tongue.
9. To treat wooden tongue.

Activities:

1. Have veterinarian come and talk to the members about pinkeye and foot rot.
2. Set up a display of medications used to treat pinkeye.

Main Points:

1. When pinkeye appears, animals should be isolated to reduce the spread of the disease in the herd.
2. Both pinkeye and foot rot can be reduced by good management. Climate and feeding practices are both important.
3. Members should learn to recognize the differences between pinkeye and virus eye infections. A common eye infection seen in cattle herds is caused by IBR. Pinkeye affects the cornea, virus infections affect the eye membranes and lining.
4. Foot rot is less common in beef herds than in dairy herds because they are not kept in a confined area. Good management practices can prevent foot rot.

5. The cause of wooden tongue can be determined by where it settles in the body. If it infects the bones and udder, it was caused by the fungus.

Wooden tongue is not common, but it is seen occasionally. It is included in this section for member information, as it is not common.

Discussion Questions:

1. What is pinkeye?
2. If one animal in a herd has pinkeye, will others get it?
3. How is pinkeye spread?
4. What is used to treat pinkeye?
5. Why are cattle with pinkeye kept in the dark (or the eye covered with a patch)?
6. How can you tell if an eye infection is pinkeye or a virus?
7. What are the symptoms of foot rot?
8. How do cattle get it?
9. How is foot rot treated?
10. How can you prevent foot rot?
11. What is wooden tongue?
12. How are cattle infected by it?
13. What other parts of the body can become infected?
14. How is wooden tongue treated?
5. What can you feed to prevent wooden tongue?

Answers to Project Book Questions:

1. What is pinkeye?
 - Pinkeye is a bacterial infection of the outer layer of the eyeball.
2. What are three conditions that increase the risk of pinkeye?
 - Vitamin A deficiency
 - dusty weather
 - windy weather
 - fly activity
 - eye injuries

3. What is the difference between a pinkeye infection and a virus infection of the eye?
 - Pinkeye affects the eyeball, virus affect the membranes and the lining of the eye.
 4. What treatments are used for pinkeye?
 - antibiotics and sulfa drugs in ointments, lotions, powders and sprays
 - cortisone injection
 5. Why are animals with pinkeye often kept in a dark area?
 - they are light sensitive.
 6. Why should diseased animals be separated from the herd?
 - They can spread the disease by contaminating feed, water and equipment with their eye discharges. Flies will also spread the disease.
-

1. Foot rot is caused by a bacteria.
2. How does foot rot enter the animal?
 - Through cracks, bruises and other foot injuries.
3. How can foot rot be treated?
 - copper sulfate
 - antibiotics
 - iodine
 - sulfamides
 - Formalin
4. How can you prevent foot rot?
 - remove dangerous materials from pens and pastures
 - have good drainage in pens and pasture
 - build concrete pads around waterers and feed bunks
5. What causes wooden tongue?
 - Wooden tongue is caused by a bacteria or fungus.
6. What can happen if wooden tongue is not treated? Why?
 - The animal can die of starvation or dehydration because it is not able to eat or swallow.
7. What is used to treat wooden tongue?
 - Sodium iodide is used to treat wooden tongue. Some abscesses may need to be cut out.

ADMINISTERING DRUGS

Objectives:

1. To identify different methods of giving medication to cattle.
2. To select a form of a drug suited to a specific method of administration.
3. To orally treat animals with drugs.
4. To give injections.

Activities:

1. Set up a display of cattle medications. Include:
 - treated feed
 - powder
 - capsules
 - boluses
 - tablets
 - paste
 - drench
 - bottled liquid for injection
2. Set up a display of equipment used to give medication. Include:
 - balling gun
 - drenching syringe
 - needles (14 and 16 gauge)
 - syringe (disposable and reusable)
3. Have a veterinarian in to talk to the group about the proper use of drugs and equipment.
4. Demonstrate:
 - balling gun
 - drenching
 - subcutaneous injection
 - intramuscular injection
 - intravenous injection* Stress safety precautions as you do each.
5. Demonstrate how to fill a syringe from a bottle of medication.

Main Points:

1. While self diagnosis and administration of drugs to animals is a common practice, it has some disadvantages.
 - a. An inexperienced person may not diagnose an illness correctly. As a result they use the incorrect drug. If they are lucky no harm is done, but there has been a risk. The main problem is that many people do not call their veterinarian after one failed treatment. What happens is that the animal's condition goes down. The veterinarian will have to treat an animal that is less able to recover. This will take more medication and time than was originally needed.

2. The form of a drug and application must be compatible. Drugs that are given incorrectly can cause an animal to go into convulsions or shock. Death is possible. Always read directions carefully.
3. Only give drugs in the amount recommended and at proper intervals. Giving more will not return the animal to good health more quickly. Overdoses can make the animal sick or just waste the drug.

The time interval between injections or administrations is also important. A drug is useful in the body for a limited amount of time. Giving it closer together is a waste of medication. Giving it further apart leaves the animal unaided for a period of time. FOLLOW DIRECTIONS!

4. When treating animals, handle them as quietly and gently as possible. A sick animal is already under stress. Any of the methods for giving medication can injure the animal. Examples:
 - a. Balling gun: scraping gums, bruizing, drench gums or palate
 - b. Stomach tube: scrape mouth, esophagus, or trachea, liquid in lungs
 - c. Subcutaneous injections: skin irritation
 - d. Intramuscular injections: infection, hit thigh bone or sciatic nerve
 - e. Intravenous injection: go through the artery, take long time to get needle in properly.
5. Be sanitary. Poor sanitation is a common cause of problems when giving injections.
 - a. Swab the top of your medication bottle with rubbing alcohol (where the needle will be inserted).
 - b. Clean the area to be injected with rubbing alcohol.
 - c. Hold the syringe, needle up and tap it to force trapped air bubbles out of the syringe after filling. Depress plunger slightly to remove air from the needle.
 - d. If you handle the needle and syringe separately, handle the needle where it attaches to the syringe, not on its length.
 - e. Use a clean, sterile needle for each animal.

Discussion Questions:

1. How can medication (drugs) be given to cattle?
2. Why are different methods of giving medication used?
3. What problems can you have giving medication?
4. What could happen if an intramuscular injection was accidentally put into a vein or artery?
5. Before treating a sick animal, why would you call a veterinarian?
6. What could happen if you give the animal an incorrect medication?
7. Why are animals restrained before giving oral drugs or injections?

8. What is the correct way to fill a syringe for an injection?
9. How can you prevent infection, or disease transfer when injecting a number of animals with medication?

Answers to Project Book Questions:

1. What are three ways a drug can be given orally?
 - feed
 - balling gun
 - drench
 - stomach tube
2. A drug that is injected is absorbed more quickly than a drug that is given orally?
3. Why does extra care need to be taken when placing a stomach tube?
 - So the mouth and esophagus are not damaged. To avoid putting the tube down the trachea and pouring medication into the tube.
4. What forms of drugs are given with a balling gun?
 - capsule
 - bolus
 - tablet
5. What are the three types of injections used?
 - subcutaneous
 - intramuscular
 - intravenous
6. Why would an intravenous injection be given instead of a subcutaneous or intramuscular injection?
 - large volumes must be given
 - drug needs to get into the blood stream immediately
 - the medication is too irritating to the animal to be given any other way

PARASITES

Objectives:

1. To list losses caused by parasite infection.
2. To recognize symptoms of parasite infections in cattle.
3. To treat animals for internal parasites.

Activities:

1. Have a local slaughterhouse save a liver condemned because of liver flukes for members to see.

2. Get a sample of lungworms.
3. Contact your local veterinarian and have him let you know where infested cattle may be seen in the area. Owner permission will be needed to go look at animals. Members should thoroughly clean their footwear after a visit to a herd that is infected.
4. Visit your veterinarian, take fecal samples that can be examined under the microscope for parasites. Have members view the slides that show an infestation. Identify the parasites.

Main Points:

1. In any herd, there will be a certain amount of parasite infestation. As herd size increases, the chances of infection increase. Better management is necessary to minimize losses. Any losses will affect the producer directly (death) or indirectly (lower levels of production).
2. Parasite control is not a one time only effort. Because the parasite lives in the body and possibly an intermediate host, the parasite is always present in small numbers. Good management practices will keep the parasites at a low level. Control should not be put off until you see symptoms of an infection.
3. Your veterinarian can diagnose parasite infestations. There are two methods used. A direct smear may be made on a slide. This is examined under a microscope.

A floatation test may also be done. It is based on the principle that worm eggs are nearly the same weight as water. When they are washed out of the feces and placed in a solution heavier than water, they float.

When having the feces from a scouring animal checked, consider that the amount of fluid in the sample has diluted the material. If a few eggs are seen, it is more likely that the animal has a heavy infestation. The same number of eggs in a normal fecal sample would indicate a light to moderate infestation.

Discussion Questions:

1. What type of losses do cattle parasites cause?
2. Why is it important to the cattle producer?
3. How do cattle get coccidiosis?
4. How can you control coccidiosis in cattle?
5. How are liver flukes transferred from one animal to another?
6. What are the symptoms of a liver fluke infestation?

7. When should animals be treated for liver flukes?
8. What is done to the livers of infested animals when they are slaughtered?
9. Why are lungworms a problem?
10. What are the symptoms of lungworm?
11. What can be used to treat animals for lungworm.

Answers to Project Book Questions:

1. How do parasites cause losses to cattle producers?
 - diseases carried by parasites
 - damage to the body tissue and internal organs
 - anemia
 - pain from the attack
 - toxic effects
 - nutrient losses
 - irritation and worry
2. Coccidiosis is caused by a protazoa.
3. The intermediate host of the liver fluke is the fresh water snail.
4. The liver fluke cyst is eaten by cattle.
5. What is bottle jaw?
 - Symptoms of a liver fluke infestation. Fluid collects under the jaw and brisket.
6. How are liver flukes controlled?
 - filling or draining wet pasture (low areas)
 - controlling snail numbers
7. What are lungworms?
 - White thread-like worms that live in the air passages leading to the lungs.
8. After being passed out in the feces, when are the larval capable of infecting cattle?
 - After four to seven days.
9. What are the symptoms of lungworm?
 - rapid shallow breathing
 - loss of appetite
 - coughing
 - unthrifty
 - death
10. Why do calves show more symptoms of lungworms than mature cattle?
 - The diameter of their air passages are smaller, so fewer worms are needed to produce a blockage.

CARCASS GRADING

Objectives:

1. To identify carcass characteristics that are used as indicators when grading beef carcasses.
2. To identify carcass grades used in Canada.
3. To list reasons for a young carcass to be graded down from A1.

Activities:

1. See the film "Choice Cut".
2. Visit the cooling room at a slaughterhouse. Older members may be interested in the slaughter process.
3. Go through the meat section of a retail grocery store.
4. Visit a butcher shop.

Main Points:

1. The 4-H beef project is a learning experience for members. As a leader, you want all of your members to be successful. To a beef producer, this means feeding out an animal that will grade A1. This is not always possible.

Choice of animal is going to affect how members animals grade. A small maturing animal unless it is very carefully fed will be too fat when it is slaughtered. If you feel this is going to happen, have the feed reduced as the animal reaches its optimum weight.

Some of the very large exotic crosses have a problem gaining enough weight by sale time. Because they must produce more muscle and bone they will be older when they begin fattening. Increasing the energy in the feed near the end of the feeding period will help.

If animals fail to grade "A1" find out why. This will help you and the member avoid the problem in the future. It is not a disgrace to grade lower. The member may learn more than if the top grade was earned through "dumb luck".

Remember that heifers will mature and start to fatten earlier than steers.

2. Beef prices are related to cutability, or retail value. This is why excess bone or fat (as compared to muscle) is discounted.

It is not related to the quality of the meat itself. An exception to this would be carcasses with excess fat or no noticeable marbling. Fat is necessary for flavor and tenderness. As the fat cooks out of the meat, it will leave small spaces and flavor the meat. As the

meat cooks it reduces water loss from the muscle tissue. Very fat meat can taste greasy and with the trend toward fitness is not what the consumer wants. Although consumers want lean meat, the meat does need some fat to have desirable eating qualities.

Bone waste is less important than fat, but the same amount cut off a lean carcass is more noticeable than off a fat carcass. This is why the bone cut off one member's project carcass may look different than the others.

3. Once the meat reaches the consumer, there is little price or no price difference. Price to the producer is not passed on to the consumer.
4. It is interesting to note that the A1 cattle do not usually have a high dressing percentage.
5. Beef carcasses may be sold whole, halves or quartered. There is a market for all carcass sizes, the home consumer and the restaurant trade have different needs. The demand is also increasing commercially for boneless beef (for hamburger patties, sausage).

Discussion Questions:

1. Why are beef carcasses inspected?
2. Why are beef carcasses graded?
3. What do the graders look for in a carcass?
4. What are the different grades of beef?
5. What does the number part of the grade tell you? For example A1 and A4.
6. What grade can a young animal get?
7. What animals grade "C"?
8. What animals grade "D"?
9. Why do dairy steers not grade as well as beef steers?

Answers to Project Book Questions:

1. When did carcass grading officially start in Canada?
- 1929
2. Why is meat inspected?
- To see that it is fit for human consumption.
3. What three factors do graders assess?
- Maturity
- Quality
- Meat Yield

4. Where is the carcass knifed to determine the meat yield?
 - Between the 12th and 13th ribs.
5. What is marbling?
 - Marbling is the fat between the muscle fibers.
6. What is the difference between the fat on an "A" carcass and a "B" carcass?
 - "A" has marbling, firm, white fat and fat cover well over the muscle surface.
 - "B" has firm or slightly soft, yellowish fat, and fat lacking over the hips and chucks.
7. What animals usually get an "E" grade?
 - Mature bulls and stags.
8. Describe an ideal beef carcass.
 - youthful (determined by lumbar vertebrae)
 - fine, firm grained, bright red rib-eye
 - at least minimum marbling
 - no marked deficiency of muscle
 - fat level within set standards

BEEF DEMONSTRATIONS

Demonstrations should be a part of every 4-H club's activities. They develop leadership, self confidence and public speaking skills in 4-H'ers, in addition to teaching them about cattle. Demonstration activities should be planned and conducted with these goals in mind.

Members in a 4-H club should all have an opportunity to give a demonstration. Topics should be decided on early in the 4-H year and 4-H'ers assigned to certain date on the club calendar. Coordinate the demonstration topic with the program topic.

Demonstrations do not have to be complex and lengthy. "How to vaccinate a calf" or "How to use a squeeze chute" are short and simple, but excellent topics for younger 4-H members. Difficulty and length of demonstration should be determined by the 4-H'ers age, experience, knowledge, ability, etc.

Beef demonstration topics are everywhere. Beef breed magazines are a good source of topics and information. For example, articles carried a farm journal or a popular beef magazine, may be used.

Start and maintain a beef demonstration topic box. A 3x5 or 5x7 file box works well with specific topics catalogued according to subjects. Leaders, junior leaders, parents, etc., can start this box and, as topics present themselves, they can be added. After the topic box is started, reference material can be cataloged according to topics. Club members should have access to this.

Have a beef demonstration orientation program. Hold this program early in the year to introduce demonstrations to parents and new club members. Older 4-H members can be asked to give demonstrations as examples. Cattle equipment, magazines, journals, books, pictures, etc. can be used to stimulate interest in demonstrations. This is fun and educational....so present it that way!

Start and maintain a beef information library. In this library include old and new breed journals, Alberta Agriculture publications, breed publications, library books, commercial publications, clinic notes, etc. This information should be easily accessible to club members; therefore, the library should be at an adult leader's home. Printed materials should be signed in and out such that the location of all material is known. The club may want to subscribe to some magazines or purchase some educational horse books.

Submit lists of desired books and magazines to school and public librarians. Most libraries do not have educational beef cattle materials, but books are purchased periodically. Make your requests early in the year.

Select a demonstration leader(s). This adult(s) should give leadership to the demonstration activities of the club. Junior leaders, who have successfully give demonstrations, are of great value in helping younger 4-H'ers select a topic, plan, and give a demonstration.

Lecture - Use this as little as possible. It may be more difficult for you and is boring for members.

Reading - Have members read the subject material before the meeting. Tell them the subject at the previous meeting.

Discussion - Ask questions about the subject. This can help members understand the importance of the subject. Good discussions can continue without the leader after it is in progress.

Games - Games are often ignored as a teaching tool. They are useful for recognition of objects.

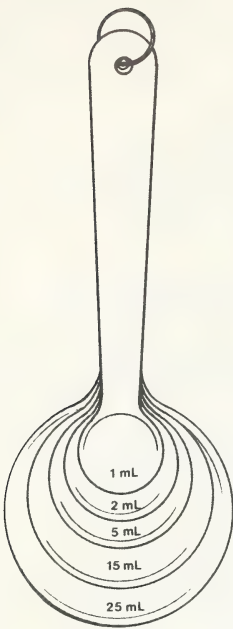
Prepared Talks - These are given by the members. Using any materials they prepare a one to five minute talk. As a leader you can make up a list of topics, or the member can decide on their own topic.

Hands-on " "Learning to do by Doing". This is important when working with cattle. Because skills are affected by the calf, practice is important.

Demonstration - Describe and explain how a "hand-on" type of skill is done so that members can learn the skill. (see following pages).

METRIC CONVERSION TABLE
Approximate Conversion to
Metric Measures

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL	BASE UNIT
<u>MASS (weight)</u>					
oz.	ounces	28.349	grams	g	gram
lb.	pounds	0.454	kilograms	kg	
ton	short tons (2000 lbs)	0.907	tonnes	t	
g	grams	0.035	ounces	oz.	
t	tonnes (1000 kg)	1.102	short tons	ton	
<u>VOLUME</u>					
tsp.	teaspoons	5	millilitres	mL	litres
tbsp.	tablespoons	15	millilitres	mL	
fl.oz.	fluid ounces	28.413	millilitres	mL	
pt.	pints	0.568	litres	L	
qt.	quarts	1.137	litres	L	
gal.	gallons	4.546	litres	L	
bu.	bushels	36.370	litres	L	
mL	millilitres	0.035	fluid ounces	fl.oz.	
L	litres	1.760	pints	pt.	
L	litres	0.880	quarts	qt.	
L	litres	0.220	gallons	gal.	
L	litres	0.027	bushels	bu.	
<u>LENGTH</u>					
in.	inches	2.540	centimetres	cm	metre
ft.	feet	0.305	metres	m	
yd.	yards	0.914	metres	m	
mi.	miles	1.609	kilometres	km	
mm	millimetres	0.0394	inches	in.	
cm	centimetres	0.394	inches	in.	
m	metres	3.281	feet	ft.	
m	metres	1.094	yards	yd.	
km	kilometres	0.621	miles	mi.	
<u>ENERGY</u>					
kcal	kilocalorie	4.186	kilojoules	kJ	joule
kJ	kilojoules	0.239	kilocalories	kcal	

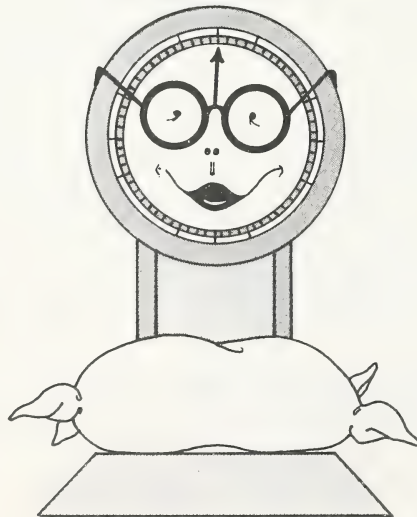


METRIC MEASURES ARE
AVAILABLE IN THESE SIZES

250 mL replaces 1 cup
500 mL replaces 2 cups



MUNSTER METRE
MEASURES LENGTH



SAM KILOGRAM
MEASURES WEIGHT



LILY LITRE
MEASURES VOLUME

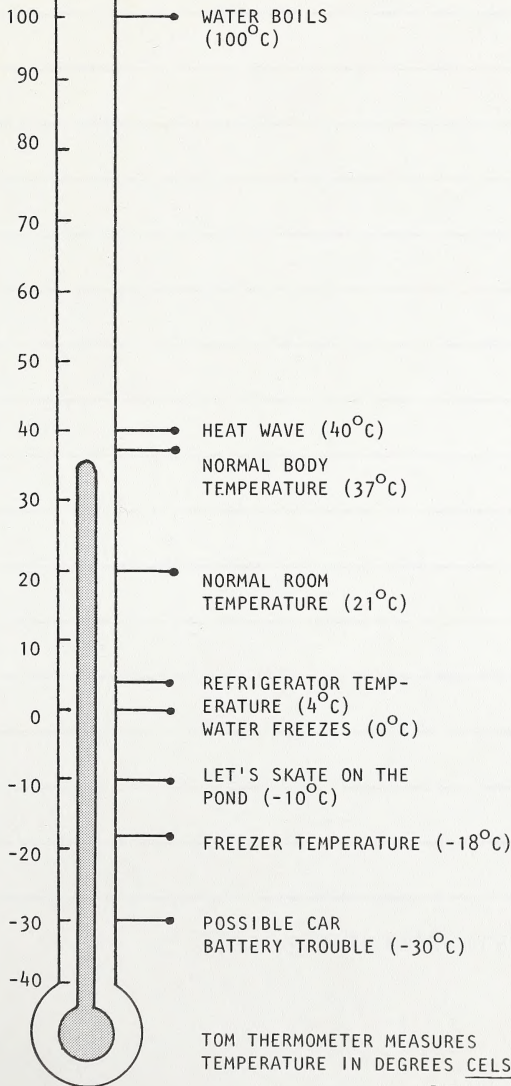
METRIC MULTIPLES AND PREFIXES TABLE

Multiplying Factor	Prefix	Symbol
1,000,000 = 10^6	mega (meg a)	M
1,000 = 10^3	kilo (kil o)	k
100 = 10^2	hecto (hek to)	h
10 = 10^1	deka (dek a)	da
(Base Unit) 1 = 10^0		
0.1 = 10^{-1}	deci (des i)	d
0.01 = 10^{-2}	centi (sen ti)	c
0.001 = 10^{-3}	milli (mil i)	m
0.000,001	micro (mi kro)	μ

(These prefixes may be applied to all metric base units.)

Example: Base Unit = litre

Add kilo to litre (symbol kL) = kilolitre. The multiplying factor is 1000. This means a kilolitre equals 1000 litres.)



TEMPERATURE: $^{\circ}\text{F} = 9/5 + 32$
 $^{\circ}\text{C} = 5/9 - 32$

OVEN TEMPERATURES:

	$^{\circ}\text{C}$	$^{\circ}\text{F}$
Very low	120-135	250-275
low	150-165	300-325
Moderate	175-190	350-375
Hot	200-220	400-425
Very Hot	230-245	450-475
Near boil	245-290	475-500

ADDITIONAL METRIC INFORMATION

from:

Metric Branch
 Alberta Government Services
 12th Floor, Park Square
 10001 Bellamy Hill
 Edmonton, Alberta T5J 3C1

Metric Commission Canada
 Box 4000
 Ottawa, Ontario

Information Division
 Canada Department of Agriculture
 Ottawa, Ontario K1A 0C7

District Extension Office

OR

Publications Office
 Alberta Agriculture
 9718 - 107 Street
 Edmonton, Alberta T5K 2C8

TOM THERMOMETER MEASURES
 TEMPERATURE IN DEGREES CELSIUS ($^{\circ}\text{C}$)

PROJECT EVALUATION

In order to keep meeting your needs in the 4-H program, we would like your assistance in completing this evaluation form. Make your suggestions on this sheet as you use this book. After the project has been completed, mail this form to:

Project Evaluation
4-H Branch
Alberta Agriculture
7000 - 113 Street
Edmonton, Alberta
T6H 5T6

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(use another page if required)

N.L.C. - B.N.C.



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AGRICULTURE
4-H BRANCH